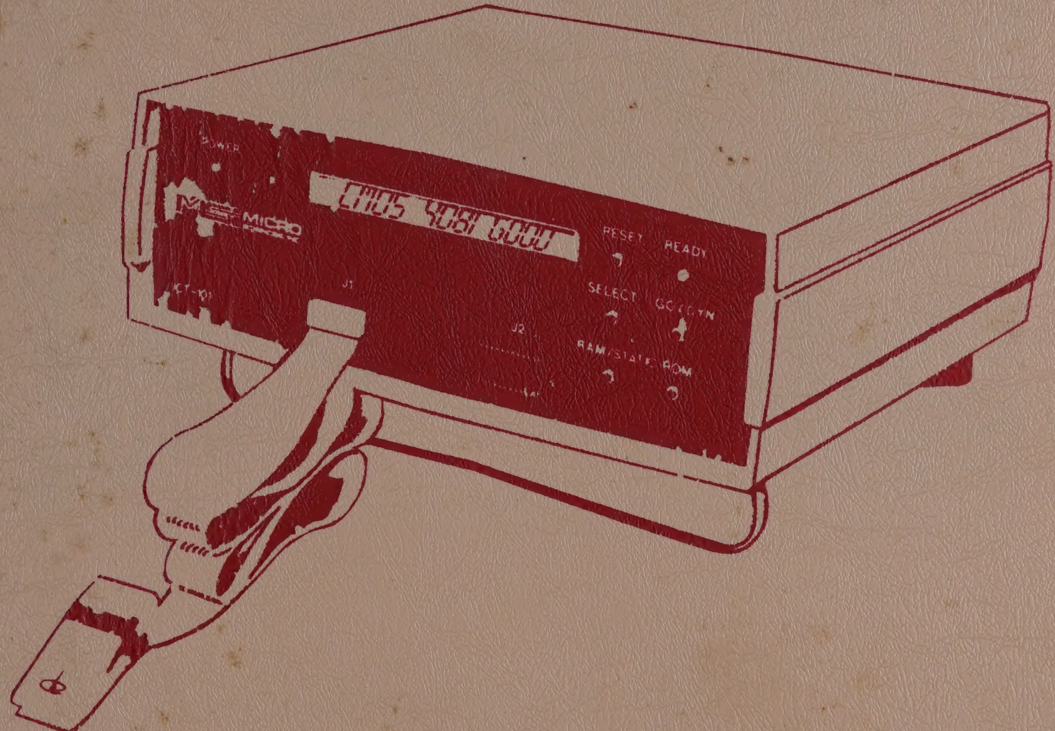
ICT - 101

Technical Operations Manual


POWER
MSI MICRO
ICT-101
CMOS 4081 GOOD
RESET
READY
SELECT
GO/DYN
RAM/STATE/ROM
J1
J2

MSI MICRO SCIENCES, INC

DALLAS, TEXAS 800/527-7141

ICT-101
OPERATION MANUAL

POWER
RESET
READY
MSI MICRO SCIENCES, INC
SELECT
GO
DYN
J1
J2
ICT-101
RAM/STATIC
ROM
TEST

MSI MICRO SCIENCES, INC
DALLAS, TEXAS
1-800-527-7141

WHAT IS THE ICT-101?

The ICT-101* from MICRO SCIENCES, INC. is a low cost, portable, Integrated Circuit Tester designed to functionally test digital logic IC's installed on a circuit board and under power. (Stand alone IC's may also be tested using the OBT/4 option.)

The ICT-101 identifies the generic IC number and at the same time, displays the test results. For example:

"7402 GOOD" for TTL or
"74C02 GOOD" for CMOS or
"UNIDENTIFIED/BAD"

The Standard ICT-101's Dictionary contains test signatures of many popular TTL and CMOS 14, 16, 20 and 24 Pin digital IC's. Presently, the Standard Dictionary permits over 175 industry standard IC's to be tested "On the Board Under Power". When basic technologies; such as: L (Low Power), LS (Low Power Schottky), S (Schottky), ALS (Advanced Low Power Schottky), HC (High Speed CMOS) and H (High Speed) are considered, all of which the ICT-101 tests, the Standard Dictionary capability is expanded accordingly. Thus, the number of IC's the ICT-101 Standard Dictionary can test is well over 1,000. Furthermore, the Dictionary includes functions of military grade equivalents (e.g. DM5400) of commercial grade IC's (e.g. DM7400).

The ICT-101 also identifies standard IC's used in certain (see Appendix 5.5) non-standard applications (e.g. certain gates disabled).

Options include a ROM and/or RAM test and general as well as customer specified Dictionary expansions for standard 14, 16, 20 and 24 Pin IC's.

Special options include the OBT/4 which tests loose 14, 16, 20 and 24 Pin IC's under power and the EDP/1 which tests the exact configuration of IC's on specific popular printed circuit boards. External Dictionary expansions are also available.

Optional accessories include a 24 Pin Test Clip and Cable and a 16 Pin Test Clip and Cable for high density situations.

Presently, the various dictionaries normally permit 60% to 90% of all standard configuration digital TTL and CMOS IC's in use today to be tested "On the Board". Additional IC's for "On the Board" tests are included in the various Expansion Options (see Appendix 5.4), the ICT-101 does not test linear IC's, PAL's, one (1) shots and unstable devices.

* Copyright 1983.

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1. GENERAL

1.1 UNPACKING AND INSPECTION

Every precaution has been taken to insure that your ICT-101 reaches you in fully operational condition. If there is any damage to the container, the unit and its container should be returned to the SHIPPER and Micro Sciences should be contacted immediately (see Maintenance and Support Service, Appendix 5.2).

Upon unpacking, inspect the unit (keep carton, foam insets and plastic bag in the event that the unit has to be returned to Micro Sciences) for any obvious physical damage; such as: broken fuse holder, switches, etc. IN PARTICULAR, examine the display to insure that it is not broken. If any damage is evident, DO NOT PLUG in the unit. Return it to Micro Sciences immediately (see Appendix 5.2) for repair or replacement.

1.2 SAFETY

Observe normal safety procedures for electrical equipment when connecting the ICT-101 to AC power. The unit is wired internally for 120V AC (unless otherwise requested).

Note that fuses should be replaced ONLY with good fuses of the specified value. Installation of a higher value fuse will void your warranty.

1.3 CARE AND MAINTENANCE

All power connections should be kept in good condition away from excessive heat sources and petroleum products. Always replace worn or damaged cables. The test cable will be the most USED and ABUSED part of the unit. Using the test cable and clip in the manner intended will insure proper functioning of the tester. The tester requires no periodic maintenance.

1.4 SPECIFICATIONS

A. Electrical Specifications:

Display:	16 character dot matrix LCD
Front Panel:	Power On/Off indicator light Ready indicator light "GO" button to initiate test "SELECT" button to change mode (e.g. TTL to CMOS) "RESET" button "RAM" button "ROM" button
Test Sockets:	J1: 20 Pin Cable Assembly IC Test Clip (tests 14, 16 and 20 Pin IC's) NO Pin #1 orientation necessary. J2: 24 Pin Cable Assembly (optional).
Common Ground Socket:	Same ground as PC Board under test
Maximum VCC:	(For board under test) +5 volts DC (+ or - 10%)
Overload Protection:	AC 1/4 AMP instantaneous Fuse (external) DC 3 AMP instantaneous Fuse (internal)
Threshold Voltage:	0/ +.8 and +3.5/ 5.0 Volts
Power Requirements:	120 (+ or - 10) VAC, 50 to 60 Hz (no selection necessary) 25 watts Strap options for 100, 220, 240 VAC, 47 to 63 Hz

B. Environmental Specifications:

Operating Ambient
Temp Range: +32F to +100F

Storage Temp. Range: -20F to +120F

C. Physical Specifications:

Size (HWD): 5.01" x 12.5" x 11.63"

Weight: 7.63 lbs.

1.5 WARRANTY

All components used in all ICT-101's are of the highest commercial grade available. Furthermore, each ICT-101 is subject to a very rigid acceptance test program during and after assembly and prior to shipment. Nevertheless, as with all components and equipment, there could be a small percentage of failure.

To the ultimate user, the ICT-101 is warranted against failure due to faulty materials or workmanship for a period of 90 days from the date of shipment. The warranty covers parts and labor to repair or replace defective parts at the factory, provided the unit has been returned by the user and the Warranty Registration Card is on file at Micro Sciences, Inc.

The above warranty is void if the ICT-101 has been modified by the customer, or if it has been abused or operated outside its electrical or environmental specifications.

To the original commercial purchaser, Micro Sciences extends a one (1) year warranty on all ICT-101 parts with the specific exception of the LCD display, display drivers, the power supply, the case, the power cable and the test cable and clips.

For as long as the ICT-101 remains in the possession of the original purchaser, Micro Sciences will provide replacement parts for any other failed parts other than the LCD display, display drivers, the power supply, the case, the power cable and the test cable and clips. Such replacement parts will be sent, on written request, to the owner for owner's installation. Under NO circumstances will Micro Sciences be responsible for more than the cost of the failed part.

This warranty is limited solely to the above equipment and this warranty and any warranties implied by State Law will apply only for the period set forth. The warrantor will not be liable for any loss, damage, incidental or consequential damages of any kind, whether based upon warranty, contract or negligence, and arising in connection with the sale, use or repair of the product. Unless contrary to State Law governing the purchase, the warrantor's liability shall not, in any case, exceed the contract price for the product claimed to be defective or unsuitable.

Prior to return of any unit for any reason, Micro Sciences must be notified (1-800-527-7141). A return authorization number will be issued and will appear on all packing lists, correspondence and the shipping label.

Units for factory inspection should be shipped via prepaid freight to Micro Sciences, Inc., 1095 S. I-45, Hutchins, Texas 75141 (Attn: Receiving/Shipping).

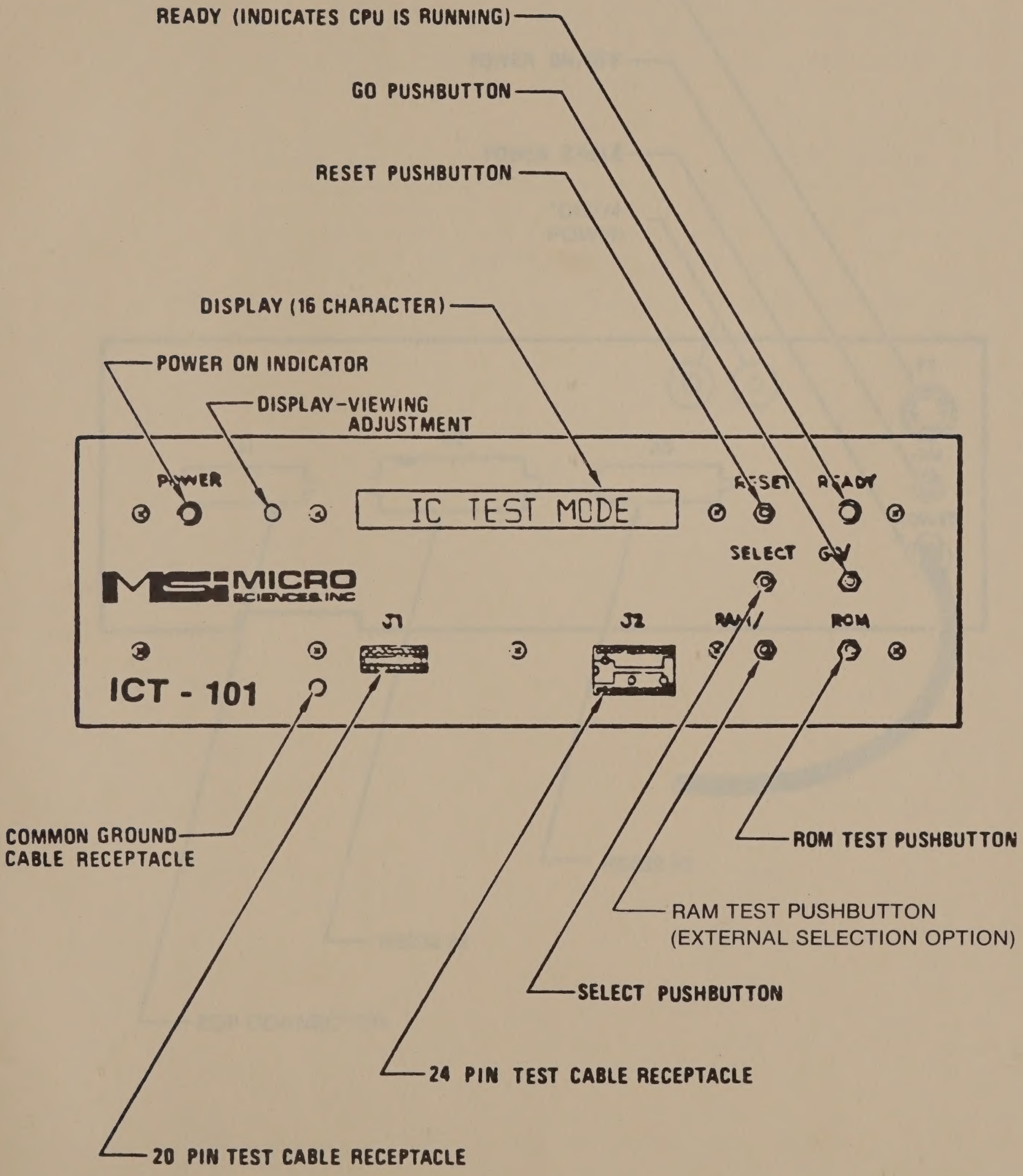
Should the factory inspection determine that defects are covered under the warranty, the customer will receive credit for incoming freight expense and the return of repaired units will be at Micro Sciences' expense. Units will be shipped (if possible) from the factory within twelve (12) working days of receipt of the defective unit. Out of warranty units or units modified or abused by customers will be invoiced for parts and labor and will be returned at customer's expense within a reasonable time.

Extensive care has been taken in designing, manufacturing and testing this unit. Proper use of this equipment will insure many years of satisfactory service.

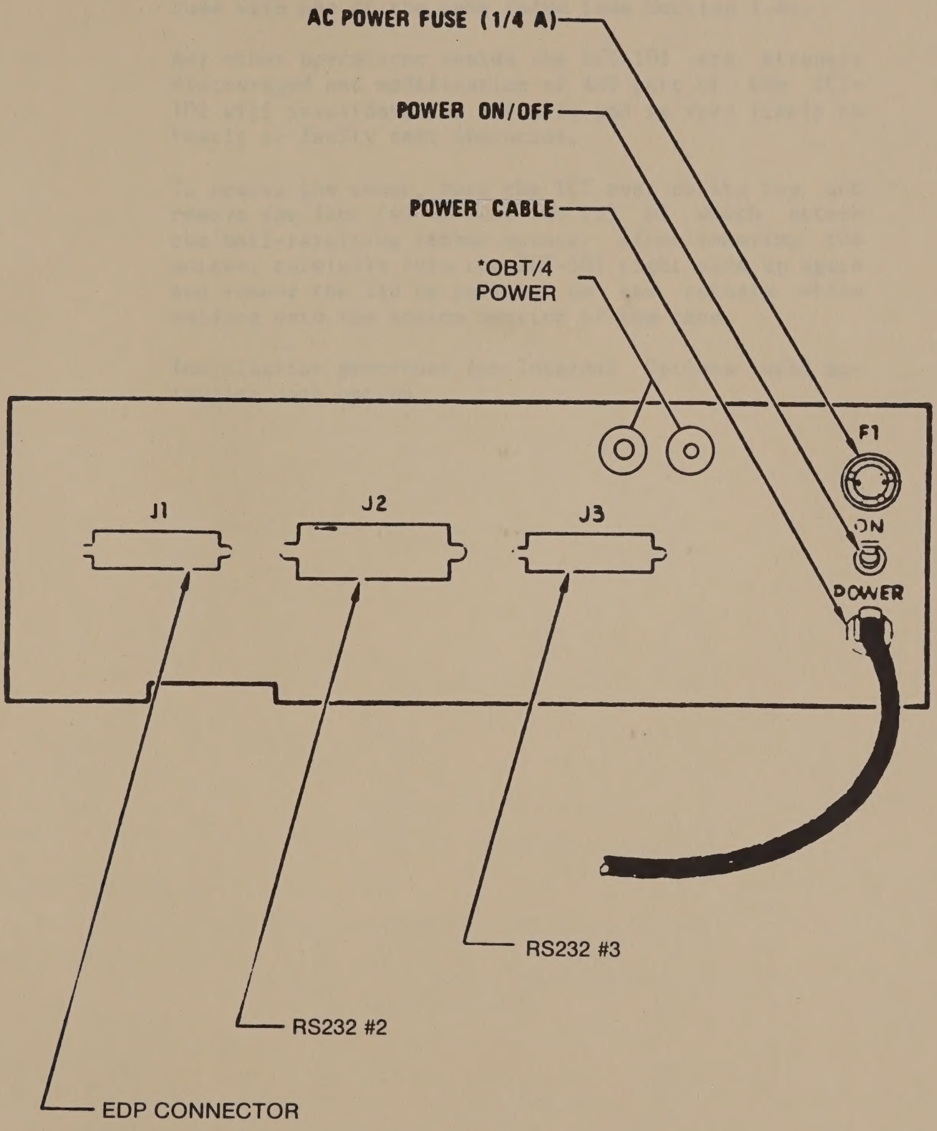
MICRO SCIENCES, INC.

2. YOUR ICT-101

2.1 Front Panel Layout


READY (INDICATES CPU IS RUNNING)
GO PUSHBUTTON
RESET PUSHBUTTON
DISPLAY (16 CHARACTER)
POWER ON INDICATOR
DISPLAY-VIEWING ADJUSTMENT
POWER
IC TEST MODE
RESET
READY
SELECT
GO
MSI MICRO SCIENCES, INC
J1
J2
RAM/
ROM
ICT - 101
COMMON GROUND CABLE RECEPTACLE
ROM TEST PUSHBUTTON
RAM TEST PUSHBUTTON (EXTERNAL SELECTION OPTION)
SELECT PUSHBUTTON
24 PIN TEST CABLE RECEPTACLE
20 PIN TEST CABLE RECEPTACLE

2.2 Back Panel Layout


AC POWER FUSE (1/4 A)
POWER ON/OFF
POWER CABLE
*OBT/4 POWER
F1
ON
POWER
J1
J2
J3
RS232 #3
RS232 #2
EDP CONNECTOR

* OBT/4 POWER NOT FOR OTHER USE OR WARRANTY INVALIDATED.

2.3 REMOVAL OF COVER

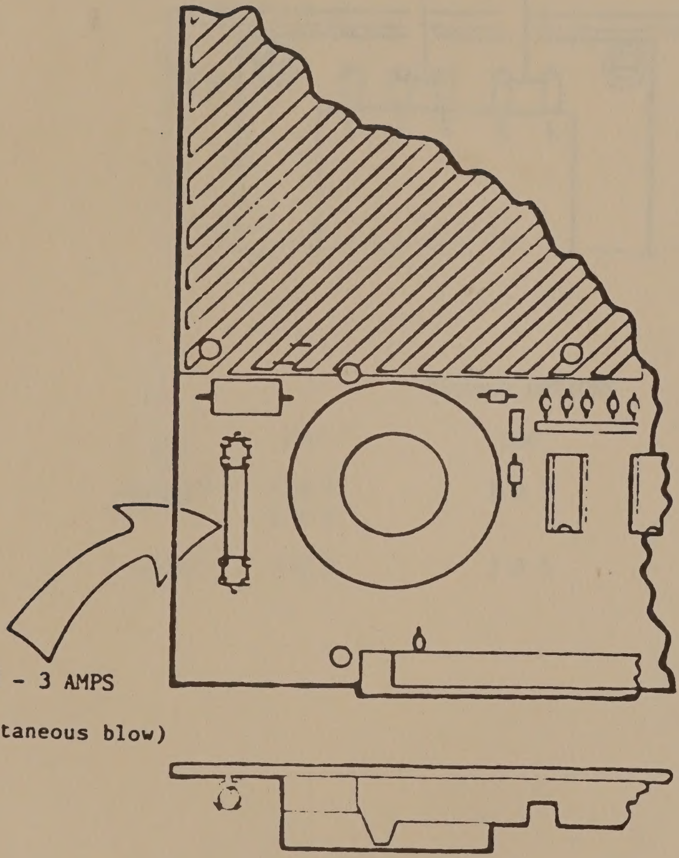
The cover of the ICT-101 should be removed ONLY for the purpose of inspecting and replacing the Internal Fuse with one of the same value (see Section 1.4).

Any other operations inside the ICT-101 are strongly discouraged and modification of ANY part of the ICT-101 will invalidate the warranty and is very likely to result in faulty test operation.

To remove the cover, turn the ICT over on its top and remove the four (4) screws; two (2) of which attach the bail-retaining rubber mounts. After removing the screws, carefully turn the ICT-101 right side up again and remove the lid by pulling on the corners while holding onto the bottom section of the case.

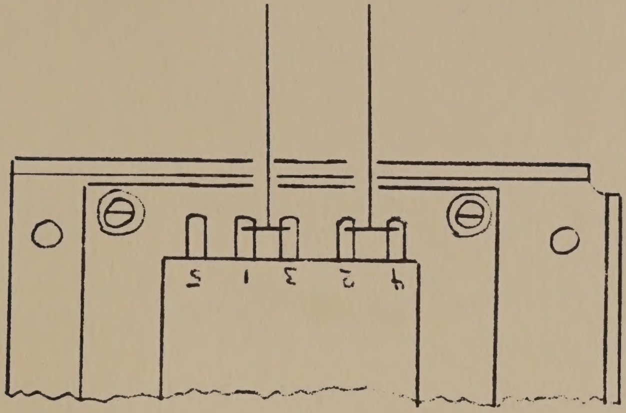
Installation procedure for Internal Options will accompany each option.

2.4 Location of Internal Fuse
(After Removal of Cover)



FUSE - 3 AMPS
(instantaneous blow)

2.5 120 VOLT OPERATION/230V OPERATION



VOLTAGE OPTIONS

VAC	100	220	240
Jumper	1 & 3 2 & 4	2 & 3	2 & 3
Input	1 & 5	1 & 5	1 & 4

3. POWER-UP AND OPERATIONS

NOTE OF CAUTION: Unless absolutely necessary, DO NOT disconnect the test cable attached to the ICT-101 as it will bend or break the pins.

3.1 POWER-UP

Upon power-up, the ICT-101 executes an internal diagnostic. Should the self-diagnostic routine detect a problem in the unit, the ICT-101 will give off a beeping sound without any additional indication on the display. Should this occur, it is recommended that you switch the power off and start it up again after a one (1) to two (2) minute wait.

If the second try has the same result, then the unit is faulty and should be returned to Micro Sciences for repair (see Section 1.5 WARRANTY).

At the end of a successful self-diagnostic, a message is displayed asking for the user to disconnect the the test clip from anything it may be attached to:

"TEST CLIP OFF/GO"

If the test clip is inadvertantly attached to an IC and the "GO" button is depressed, a message will be displayed:

"INTERFACE BAD"

Please disconnect external active or passive elements from the test clip, turn off the power and start over with the self-diagnostic (see Section 3.1 POWER-UP, above). If the "INTERFACE BAD" condition persists:

A. Check that the test cable is firmly attached to the ICT-101.

B. The ICT-101 has internal interface problems. The unit is faulty and should be returned to Micro Sciences.

As soon as "TEST CLIP OFF/GO" is displayed and with the test clip still detached, press the "GO" button for the ICT-101 to perform a diagnostic on its interfor the ICT-101 to perform a diagnostic on its interface. Performance and termination of this routine is indicated by a rapid succession of displays:

"DIAGNOSTIC RUNNING"
"DIAGNOSTIC GOOD"
"TTL MODE SET" OR
"CMOS MODE SET"

The user can change from TTL to CMOS mode and back by pressing the "SELECT" button. However, the ICT-101 will test TTL or CMOS regardless of the mode it is in. (The "SELECT" button is provided to facilitate the RAM/ROM test function - see Section 4. OPTIONS).

Once the TTL or CMOS mode is set and the corresponding message is displayed on the unit, the ICT-101 is ready for test operation.

NOTE: If the EDP/1 or ROM/1 option hardware is attached, then the rapid succession of displays will be:

"DIAGNOSTIC RUNNING"
"DIAGNOSTIC GOOD"

E = RAM I = GO

At this point, the user may choose whether they want to use Internal Memory (standard operation) or to use External Memory (ICT-EDP/1 option).

To use the ICT-101 in its normal operation, just push the "GO" button. The unit will then display:

"TTL MODE SET" or
"CMOS MODE SET"

The user can change from TTL to CMOS mode and back by pressing the "SELECT" button. However, the ICT-101 will test TTL or CMOS regardless of the mode it is in. (The "SELECT" button is provided to facilitate the RAM/ROM test function - see 4. OPTIONS).

Once the TTL or CMOS mode is set and the corresponding message is displayed on the unit, the ICT-101 is ready for test operation.

If the operator wishes to reselect either from "INTERNAL TO EXTERNAL" or from "EXTERNAL TO INTERNAL", then the "RESET" button should be pushed. This will again display:

E = RAM   I = GO

The user may again choose his option.

3.2 PREPARATION OF THE PC BOARD CONTAINING LOGIC IC'S TO BE TESTED

Before any testing commences, the test board should be subjected to a thorough visual inspection searching for non-IC problem sources; such as: broken leads, PCB anomalies, missing IC's, burn spots, etc.

Prior to testing the IC's on the board, two (2) conditions MUST be met:

A. The PC board with logic IC's that are to be tested has to be powered up with a +5V power source against logic ground. (Excessive voltage (> +6V) may damage the unit and will void the ICT-101 warranty.)

Should the board under test require other than +5 Volts in normal operation, the power source has to be replaced with a 5 Volt source for the ICT-101 to work reliably. (Note that at the reduced voltage, the IC's to be tested will still be active.) The +5 Volts needs to be applied on the downside of any regulator on the PC board; the best place may be across a filter cap.

Should any board in normal operation require positive and negative voltage (e.g. -5V, -12V), the board should be connected to +5V on the positive circuits only. IC's then under power may be tested.

Care must be taken that the logic ground of the PC board is connected to the ground terminal of the ICT-101 (front plate) via the ground lead provided with the unit.

WARNING: The test clip should NOT be left on any IC under test for more than one (1) minute. Extensive application of +5 VDC can weaken the IC.

B. For proper testing of logic IC's, the board has to be in a static condition. In preparation for the test, the board has to be devoid of active IC's; such as: microprocessors or clock generators. Thus, active elements on the board have to be removed or effectively disabled; for example, by tieing the clock generating input to an appropriate level.

3.3 TEST OPERATION

After correct testing conditions have been assured on the board, the test clip can be connected to the logic IC to be tested. Note that the orientation of the test clip relative to the IC's pins is not relevant as long as contact is made to all pins. Upon depressing the "GO" button, the ICT-101 will proceed in rapid sequence as follows:

A. Locates ground and VCC on the IC.

B. Determines the orientation of the clip relative to the IC.

C. Determines pin count.

D. Compares IC specific responses to ICT-101 originating signals with response table in the ICT's Library (see Appendix 5.1 and 5.3).

E. Displays the outcome of matching the IC's responses with programmed responses.

3.4 INTERPRETATION OF TEST RESULTS

Testing of logic IC's can result in alternative displays on the ICT-101's front panel; for example:

A. "7402 GOOD" or "74C02 GOOD"

This message identifies the generic chip number and determines this chip to be "GOOD". When in the CMOS mode, the ICT-101 insets a "C" for CMOS in the standard (7400 series) part number. When in the TTL mode, the industry standard 7400 numbers are displayed.

B. "UNIDENTIFIED/BAD"

This message means that the chip's characteristics cannot be matched with that of a chip in the Library. This indicates that either:

1. The chip is bad OR
2. The chip is not in the Library OR
3. The chip is wired in the circuit board in such a way as to disguise its identity. Thus, the chip may or may not be in the Library OR it may or may not be good (see Section 3.6 IC MODE CONFIGURATIONS).

C. "CAN'T FIND GND"

The ICT-101 cannot find the ground lead. Thus either:

1. The test clip is not making contact with the ground pin OR
2. There is no connection from logic ground to the IC under test. Thus, insure that the test clip makes contact with all the pins of the IC under test and does not make contact with any other adjacent IC's or other components and also insure that the board under test is properly grounded and the test unit ground is connected.

D. "CAN'T FIND VCC"

Again insure that the clip contacts ALL leads. If it does, the power may not reach the IC or the IC is indeed bad. Be sure to check the +5V DC power source and/or location of the +5V DC test clip originating from the users power supply.

E. "7402 #2 NOOP" or "74C02 #2 NOOP"

The ICT-101 obtained enough information from the testing process to identify the IC. However, Gate #2, for example, is non-operating either by design or due to a bad IC.

F. "CAN'T LOCATE"

This message will occur when VCC and/or ground are located on non-standard pins. (Example: 7473, 7477, 7478). This type IC cannot be tested except with a special ICT-101 option.

G. "RAM TEST/ROM TEST INACTIVE"

Without the RAM/ROM Test Options installed (available from Micro Sciences), the ICT-101 in its standard configuration is unable to test memory chips. Thus, without the appropriate option installed in the ICT-101, the above message(s) will be displayed.

In summary, the ICT-101 never says "7402 BAD" because there are other conditions which can occur that will not allow the ICT-101 to identify a good IC.

Upon completion of the testing process, the results will be shown on the display for about three (3) seconds before the tester returns to the "TTL MODE SET" or "CMOS MODE SET" condition. The display can be retained by holding down the "GO" button. Alternatively, the test can be repeated.

3.5 ICT-101 LIMITATIONS

Extensive observation of the ICT-101's performance in a wide variety of testing conditions has indicated some limitations of the ICT-101's testing ability.

"UNIDENTIFIED/BAD" conditions will result if:

A. Chip generated pulses are of extreme frequency or are of very short duration; for example: A 7474 wired as a one-shot, generates a pulse that the ICT-101 cannot see. Also, some counters wired in unusual configurations may test as "UNIDENTIFIED/BAD". If this condition is encountered routinely, contact Micro Sciences for clarification and/or custom programming.

B. A diode is tied from an input pin of the IC to VCC or GROUND. The ICT-101 will identify these gates as "NOOP".

It should be noted that while the ICT-101 has tested a wide range of logic IC's, certain conditions may be presented to your tester which result in erroneous test messages. If the ICT-101 does not comprehend these conditions in the above exception, Micro Sciences may be consulted.

3.6 IC "MODE" CONFIGURATIONS

Many design engineers utilize certain multi-capability IC's to perform different tasks (non-standard outputs). Section 5.52 of this manual visually shows some of the many hundreds of special "MODE" configurations that are regularly used by PC board design engineers to accomplish the logic action (results) they need. Note the extra VCC and ground locations as well as pins tied together. The ICT-101 Standard Dictionary will identify the mode configurations shown in this appendix by displaying the IC and the correct mode.

Examples:	4013	Mode 26
	74240	Mode 4

Mode 1 is the standard IC configuration and will be shown as a regular IC rather than a mode.

3.7 TECH TIPS

Periodically, Micro Sciences, Inc. will issue "Tech Tips". These articles on actual ICT-101 user experiences should bring broader understanding of new test concepts and actual board test situations.

For future reference, we suggest that owners store their Tech Tip Bulletins in this section of the ICT-101 manual.

4. OPTIONS

The ICT-101 can only test static memory IC's. Devices with 24 Pins require an appropriate test cable. For information regarding option availability, delivery time and prices, please contact your nearest Micro Sciences' Representative.

Below are brief descriptions of various options that will be available for your expanded testing needs.

4.1 RAM/ROM OPTIONS

A. RAM TEST OPTION (ICT-RAM/1)

Includes programming of many industry standard static RAMS. These include 2114, 2115, 2142, 2147, 2148, 2167 or equivalent devices.

By pressing the "RAM" button, the "RAM TEST-SELECT" message is displayed. The RAM test to be performed is chosen by pressing the "SELECT" button until the required test program is displayed. When the proper test clip is attached to the RAM to be tested, the "GO" button is pressed.

The ICT-101 does a bit by bit or a byte by byte test. If the RAM is "BAD", the ICT displays the "RAM-NO GO". If the memory chip is "GOOD", the ICT displays "RAM CHECK GOOD". To exit the RAM test or another mode, press "RESET".

B. ROM TEST OPTION (ICT-ROM/1)
ROM SOCKET-ADDITIONAL (ICT-ROM/SOK)

The maximum ROM density is 4K by 8 bits. Included in this option is a test for a standard 2716/2732 Pin-out ROM/PROM, the 24 Pin Test Clip and the EDP Option. The procedure for testing ROM's is the same as for RAM's, except that the "ROM" button is utilized. When the desired ROM test has been selected, a known good ROM is inserted in the socket; the test clip is attached to the ROM to be tested and the "GO" button is pressed. The ICT does a byte by byte comparison. Result displays are the same as for the RAM test.

NOTE: Address drivers to RAM or ROM under test may have to be disabled to insure proper testing.

4.2 EDP - SPECIAL BOARD TESTING

The External Dedicated Prom (EDP) options provides hardware and proms with test programming for SPECIFIC POPULAR printed circuit boards. (See M.S.I. EDP catalog.)

The EDP hardware consists of a plug and strap unit mounting a 24 Pin Zero Force (ZIF) Socket. The EDP 2732 Proms are programmed for each TTL/CMOS Digital IC as configured on the specific PC board. When the PC board under test is powered up and the appropriate test clip is attached to the IC to be tested, the ICT-EDP/1 will allow the ICT-101 to address the remote EDP and check for the proper response. If the IC is good, the display will read "7474 U12 OK". This indicates the logic correct IC number plus the board location(s) of the IC under test.

4.3 OBT - LOOSE IC TESTING

The ICT-OBT/4 Accessory provides a means for powering up loose IC's (14, 16, 20 and 24 Pin) and testing their logic functions. This provides for easy incoming quality control inspection as well as verifying good or bad for loose IC's to be inserted into repair printed circuit boards.

The OBT/4 comes with ZIF sockets for 14, 16, 20 and 24 Pin IC's, Off/On switch, Pin Size Selection switch and verification LED's, flat cable strap plug adaptable to the ICT-101 front panel J2 socket, 5V power and ground cable plug adaptable to the ICT-101 back panel.

4.4 DICTIONARY EXPANSION SERVICES

Micro Sciences offers updating services which can be subscribed to or ordered. These services update the Dictionary to comprehend popular new 14, 16, 20 and 24 Pin Digital Logic IC's that have appeared on the market.

A. ICT-CPS/1

This service allows ICT-101 users to send samples to Micro Sciences of good IC's that are not included in the standard Dictionary but which the customer wishes to have added to the Dictionary of HIS ICT-101 (using internal Eprom).

This service also allows customers to send their private PC boards for confidential programming similar to the EDP/1 option which then allows on-the board testing. (See 4.2 EDP - SPECIAL BOARD TESTING.)

B. ICT-EX204

This option provides an expansion of the Standard Dictionary to include high volume 20 and 24 Pin IC's (see Appendix 5.41). In order to install any of these options, Micro Sciences will forward a programmed ROM (E-PROM) with instructions for USER installation replacing the old (E-PROM). The old E-PROM must be returned to Micro Sciences for full credit.

C. ICT-EX205

This option provides an expansion of the standard Dictionary to include additional 14, 16, 20 and 24 Pin IC's (see Appendix 5.42).

D. ICT-EDP (EXTERNAL DEDICATED PROM)

The EDP Option (see Section 4.2 EDP - SPECIAL BOARD TESTING) allows for special board programming or for expanded dictionaries of IC programmed responses as an external rather than internal function (see 4.4 E. ICT-EL2001 below). This lowers test time required and provides for multiple external dictionary modules. EX204 and EX205 may be used in EDP/1 for faster test response time.

E. ICT-EL2001 (EXTERNAL LIBRARY - Available Mid '85)

This option allows periodic dictionary expansion modules to include testing of many new popular digital logic SSI and MSI chips. The option includes the standard ICT-EDP hardware plus special proms containing various IC programmed responses (see Section 3.3 TEST OPERATION).

4.5 ACCESSORIES/TEST CABLES

A. 16 PIN TEST CABLE (ICT-16C)
20 PIN TEST CABLE (ICT-20C)
24 PIN TEST CABLE (ICT-24C)

The ICT-101 comes with 20 and 24 Pin Front Panel Sockets installed and a 20 Pin Test Cable and Clip. A 24 Pin Test Cable and Clip is available. A 16 Pin Test Cable and Clip is available (plugs into the 20 Pin Front Panel Socket). All test cables are three feet (3') long.

5. APPENDICES

5.1 IC DICTIONARY APPENDIX

The ICT-101 tests various digital IC's relative to their logic function; therefore, it will test 7400, 74L00, 74LS00, 74ALS00, 74H00, 74HC00, 74S00 equally. If the IC's are good, the display will read: "7400 GOOD".

The ICT-101 also tests mil spec IC's with nomenclature as below:

DM5400
DM5400J
DM5400J/883
DM5400W/883
DM54ALS00J
DM54H00J
DM54L00J
DM54L00J/883
DM54L00W/883
DM54LS00J
DM54LS00J/883
DM54LS00W/883
DM54S00J
DM54S00J/883

JM38510/00104BCA/BCB/BDA/BDB

The IC's are all tested equally and if they are good, the display will read: "7400 GOOD". The ICT-101 does not distinguish between military and commercial operating nomenclatures, so "7400" will be displayed irrespective of the part number.

Section 5.5 has lists of IC's identified generically and by O.E.M. manufacturer's product description or function. For example:

7400	QUAD 2-INPUT NAND GATE	[G]
SN74LS10J	TRIPLE 3-INPUT NAND GATE	[M]

The next page shows many of the various nomenclature assigned to only one (1) IC; the 7474 flip flop.

G = GENERIC
M = MOTOROLA
N = NATIONAL SEMI
T = TX INSTRUMENTS
S = SIGNETICS
F = FAIRCHILD

5.11 7474 EXAMPLES:

The following IC numbers will all be tested under 7474 logic and if "GOOD", will be displayed "7474 GOOD".

Fairchild:

7474DC, 7474PC, 74F74DC, 74F74PC, 74H74DC, 74H74PC, 74LS74DC, 74LS74PC, 74S74DC, 74S74PC

Motorola:

MC74F74N, SN74LS74AJ, SN74LS74AJD, SN74LS74AJDS, SN74LS74AJS, SN74LS74AN, SN74LS74AND, SN74LS74ANDS, SN74LS74ANS, MC74HC74J, MC74HC74JD, MC74HC74JDS, MC74HC74JS, MC74HC74N, MC74HC74ND, MC74HC74NDS, MC74HC74NS

National Semi-Conductor:

DM7474J, DM7474N, DM74H74J, DMH74N, DM74ALS74J, DM74ALS74N, DM74L74J, DM74L74N, DM74LS74AJ, DM74LS74AN, DM74LS74J, DM74LS74N, DM74S74J, DM74S74N, MM74C74J, MM74C74N, MM74HC74J, MM74HC74N, MM74PC74JI, MM74PC74J, MM74PC74NI, MM74PC74N

RCA:

CD74HCT74E, CD74HC74E

Signetics:

N7474F, N7474N, N74F74F, N74F74N, N74LS74AD, N74LS74AF, N74LS74AN, N74S74D, N74S74F, N74S74N

Texas Instruments:

SN7474, SN74L74A, SN74LS74A, SN74S74A, 74HC74S

Military:

5474, 5474M, 5474DMQB, DM5474J, DM5474J/883, DM5474W/883, JB5474F, JB5474W, JM38510/00205BCA, JM38510/00205BCB, JM38510/30102BCB, JM38510/30102BDB, JM38510/07101BCB, JM38510/

07101BDB, S5474F/883B, S5474W/883B, SN5474F/883B, SN5474W/883B, DM54H74J, SN54H74J, SN54H74J/883, CD54HCJ74F, DM54L74J, DM54L74J/883, DM54L74W/883, SN54L74J, SN54L74J/883, SN54L74W/883, 54LS74DM, 54LS74DMQB, 54LS74FMQB, DM54LS74AJ, DM54LS74J, DM54LS74J/883, DM54LS74W/883, JB54LS74AF, JB54LS74AW, S54LS74AF/883B, S54LS74AW883B, SN54LS74A, 54S74DM, 54S74DMQB, 54S74FMQB, DM54S74J, DM54S74J/883, JB54S74F, JB54S74W, S54S74F/883B, S54S74W/883B, SN54S74F/883B, SN54S74W/883B, MM54C74J, MM54C74J/883, MM54C74W/883, 54HC74BCAJC, CD54HC74F, SN54HC74J, MC54HC74J, MC54HC74JD, MC54HC74JDS, MC54HC74JS, MM54HC74J, MM54PC74J

5.2 MAINTENANCE AND SUPPORT SERVICES

The ICT-101 does not require regular maintenance. However, it is recommended that the unit is kept away from excessive heat and dust. All components used in all ICT-101's are of the highest commercial grade available. Furthermore, each ICT-101 is subject to a very rigid acceptance test program during and after assembly and prior to shipment. Nevertheless, as with all components and equipment, there could be a certain small percentage of failure. Contacts (clip, sockets) and displays may require cleaning on an as required basis.

In case of trouble with the unit, notify Micro Sciences (1-800-527-7141) for instructions. A return authorization number will be issued and will appear on all packing lists, correspondence and the shipping label. No return will be serviced without an authorization number.

Units for factory inspection should be shipped via prepaid freight to Micro Sciences, Inc., 1095 S. I-45, Hutchins, Texas 75141 (Attn: Receiving/Shipping).

Should the factory inspection determine that defects are covered under the warranty, the customer will receive credit for incoming freight expense and the return of repaired units will be at Micro Sciences' expense. Units will normally be reshipped from the factory within twelve (12) working days of receipt of the defective unit. Out of warranty units or units modified or abused by customers will be invoiced for parts and labor and will be returned at customer's expense within a reasonable time. Extensive care has been taken in designing, manufacturing and testing this unit. Proper use of this equipment will insure many years of satisfactory service.

5.3 STANDARD DICTIONARY

7400 (7403, 7426, 7437, 7438, 74132)
7402 (7428, 7433, 74128)
7404 (7405, 7406, 7414, 7416, 4069, 741004)
7408 (7409, 741008)
7410 (7412, 741010)
7411 (7415)
7420 (7413, 7422, 7440, 74140)
7421
7427
7430
7432
7442 (7445, 74145)
7448 (7449)
7474
7486 (74136)
74107
74138
74139
74147
74151 (74251)
74153
74154**
74157 (74257, 74158, 74258)
74160 (74162,40160, 40162)
74161 (74163, 40161, 40163)
74173
74174 (40174)
74175 (40175)
74192 (40192)
74193 (40193)
74240
74241
74243
74244
74248
74253
74259

4001
4002
4011 (4093)
4012
4013
4015
4017
4020
4022
4023
4024
4025
4028
4030 (4070)
4040
4043
4044
4071
4072
4073
4075
4081
4082
4502
4511
4543

74266
74365 (8095)
74366 (8096)
74367 (8097, 4503, 74368, 8098)
74374

Chips listed above in parenthesis will be displayed as the chip number that preceeds the parenthesis (If identifiable).

** 24 Pin IC (Requires 24 Pin Test Cable)

5.4 OPTIONAL EXPANDED DICTIONARIES

EX204 (5.41) and EX205 (5.42) are internal expansions which may be accomplished by adding additional E-proms to the ICT-101 units CPU PC board at the appropriate socket.

EL2001 (5.43), EL2002, EL2003, etc. are External Library expansions which work in conjunction with the EDP (see Section 4.2) external hardware. These options are easily expandable and help cut down on testing time.

5.41 EX204

74154**
74240
74241
74244
74245 (74640, 74643)
74299
74354 (74356)
74373 (74533, 74534, 74573)
74375
74563 (74574)
74646** (74648**)
74658
74903
4305
4306
4512
4515**
4519
4520
4723

** 24 Pin IC (Requires 24 Pin Test Cable)

5.42 EX205 (TENTATIVE - LISTING)

1488
1489
4000
4008
4021
4027
4076
4099
4522
4526
7407
7417
7423
7425
7446
7447
7450
7451
7453
7455
7460
7462
7464
7465
7470
7471
7472
7485
7495
74108
74109
74112
74113
74114
74125
74126
74133
74135
74148
74150**
74155
74156
74168
74169
74180
74182
74184
74185
74190
74191
74192
74193
74194
74198
74199
74386
74390
74393
74808
74832

5.43 EL2001 - NOT YET ISSUED

6. THEORY OF OPERATIONS

6.1 BLOCK DIAGRAM

The block diagram for the ICT-101 is shown in Figure 6.1 and is explained in detail in Section 6.3.

6.2 NOMENCLATURE

Logic levels will be specified as being either a Logic 0 or Logic 1.

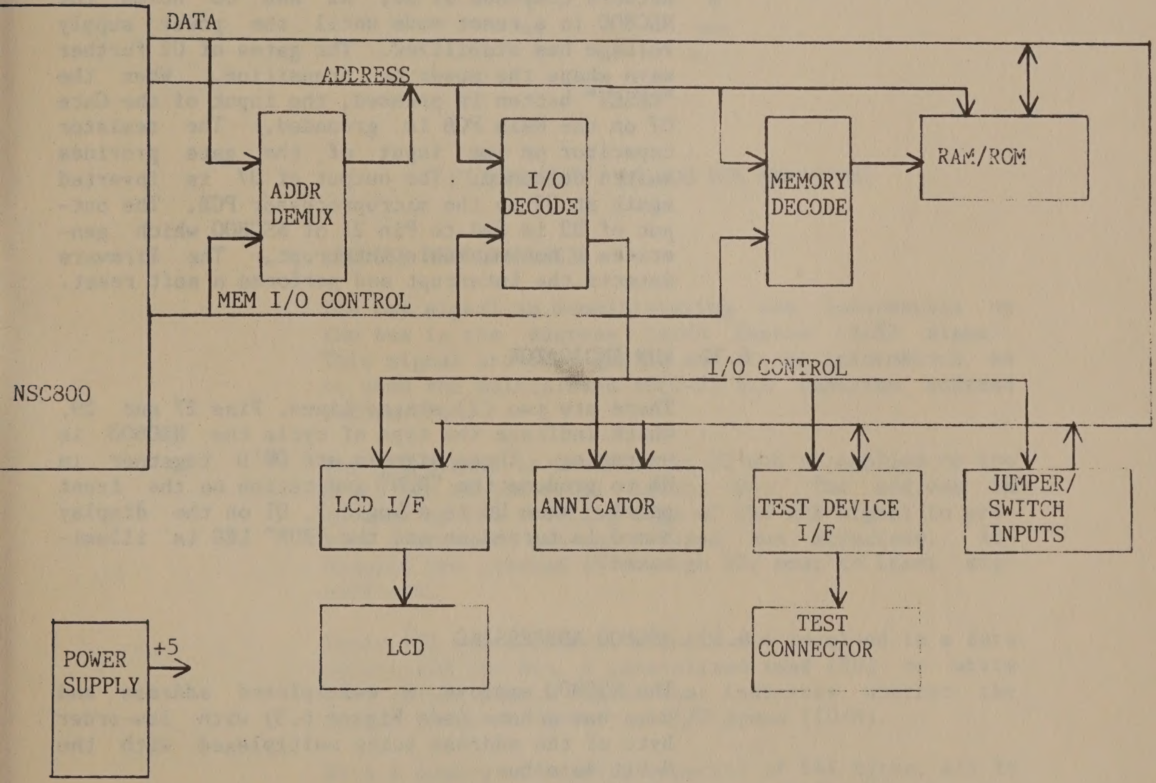

DATA
ADDRESS
ADDR DEMUX
I/O DECODE
MEMORY DECODE
RAM/ROM
MEM I/O CONTROL
NSC800
I/O CONTROL
LCD I/F
ANNICATOR
TEST DEVICE I/F
JUMPER/ SWITCH INPUTS
LCD
TEST CONNECTOR
POWER SUPPLY
+5

FIGURE 6.1 ICT-101 BLOCK DIAGRAM

6.3 NSC800 MICRO PROCESSOR

The NSC800, U1, CPU provides an on chip oscillator which is driven by X1, a 2.4576 MHz oscillator. The clock circuitry divides this external frequency by two (2) and provides a square wave clock signal to the rest of the system at one-half (½) the input frequency. This clock signal, CLK, is the basic timing signal for all CPU operations.

6.31 NSC800 RESET

When power is applied to the ICT-101, a delay network composed of D1, R2 and C6 holds the NSC800 in a reset mode until the power supply voltage has stabilized. The gates of U2 further wave shape the power on transition. When the "RESET" button is pressed, the input of the Gate U7 on the Main PCB is grounded. The resistor capacitor on the input of the gate provides switch debounce. The output of U7 is inverted again at U2 on the microprocessor PCB. The output of U2 is fed to Pin 21 of NSC800 which generates a non-maskable interrupt. The firmware detects the interrupt and performs a soft reset.

6.32 RUN INDICATOR

There are two (2) status lines, Pins 27 and 29, which indicate the type of cycle the NSC800 is executing. These signals are OR'D together in U6 to produce the "RUN" indication on the front panel. When U6 is a Logic 1, Q1 on the display board is turned on and the "RUN" LED is illuminated.

6.33 NSC800 ADDRESSING

The NSC800 employs a multiplexed address and data bus scheme (see Figure 6.3) with low-order byte of the address being multiplexed with the 8-bit data bus.

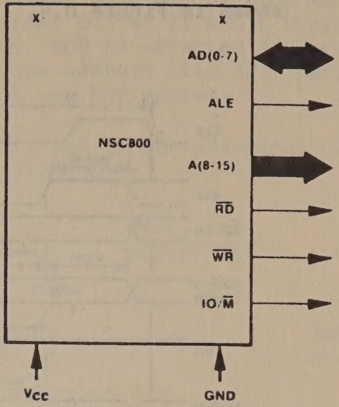


FIGURE 6.3 NSC800 BUS STRUCTURE

6.4 ADDRESS DEMULTIPLEXER

The key signal in demultiplexing the information on the bus is the Address Latch Enable (ALE) signal. This signal provides gating and strobe information as to when the multiplexed AD(0-7) bus contains address information.

The ALE signal is inverted by U2 and is applied to the clock pin of the octal latch, U4. The address is latched on the trailing edge of the ALE signal to provide a standard non-multiplexed bus structure. Addresses are labeled AF through A0; most to least significant.

Three (3) other control signals are involved in a data access via the bus, a generalized read (RD) or write (WR) strobe plus a signal that indicates whether the access is to the memory or I/O space (IO/M).

With a memory addressing capacity of 64K bytes, all 16 bits of address information are used; the I/O capacity of 256 I/O ports only employs 8 bits of address with the I/O address present on both the high-order A(8-F) and low-order AD(0-7) bytes.

The timing for a basic read or write operation is shown in Figure 6.4.

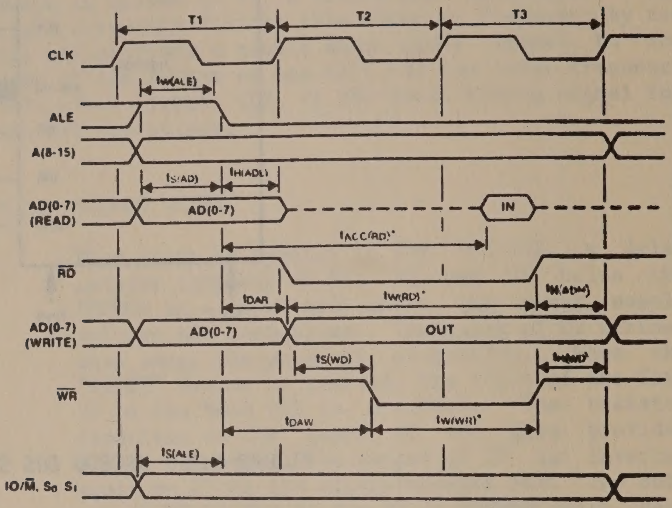

T1
T2
T3
CLK
$t_{W(ALE)}$
ALE
A(8-15)
$t_{S(AD)}$
$t_{H(ADL)}$
AD(0-7) (READ)
AD(0-7)
IN
$t_{ACC(RD)}$*
$\overline{RD}$
t_{DAR}
$t_{W(RD)}$*
$t_{W(ADH)}$
AD(0-7) (WRITE)
AD(0-7)
OUT
$t_{S(WD)}$
$t_{H(WD)}$*
$\overline{WR}$
t_{DAW}
$t_{W(WR)}$*
$t_{S(ALE)}$
IO/$\overline{M}$, S_0 S_1

FIGURE 6.4 NSC800 MEMORY READ AND WRITE CYCLE

6.5 MEMORY DECODE

The Memory Decode Logic is used to select the ROM's or RAM. The heart of the Decode Logic is U5, a 4 to 16 line decoder. The decoder is enabled when the following conditions are met:

1) The IO/M control line from NSC800 is a Logic 0 and

2) The output of U3 is a Logic 0 which resulted from the RD or WR inputs being a Logic 0.

NSC800 addresses AC through AF; select one (1) of sixteen (16) outputs when the enable conditons are met.

The outputs of the decoder are Logic 0 active. Outputs 1 through 6 are for selections of ROMS. Outputs 7 through 10 and 12 through 15 are reserved for future enhancements. Output 11 provides logic sequence selection for either RAM, U14 or ROM, U13. RAM is selected by Decoder Output 11 and a Logic 1 on the address line AB. ROM is selected by Decoder Output 11 and a Logic 0 on address line AB. Decoder Output 16 used to select the EDP option.

Table 6.5 lists the NSC800 addresses and the corresponding ROM/RAM enabled.

TABLE 6.5
MEMORY MAP

NSC800 Address	Resignator Designator Enabled
0000H through 0FFFH	U7
1000H through 1FFFH	U8
2000H through 2FFFH	U9
3000H through 3FFFH	U10
4000H through 4FFFH	U11
5000H through 5FFFH	U12
A000H through A7FFH	U13
A800H through AFFFH	U14

6.6 RAM/ROM

6.61 ROM

ROM U13 have NSC800 addresses A0 - AA connected to address pins. ROM U7 through U12 have NSC800 addresses A0 - AB connected to address pins. All ROM's have their outputs connected to Data Bus D0 through D7. The data from a memory location in a ROM is selected by a Logic 0 on the RD control line and Logic 0 on an output of the decoder.

6.62 RAM

RAM U14 have NSC800 addresses A0 - AA connected to address pins. RAM outputs are connected to Data Bus D0 through D7. The data from a memory location in the RAM is selected by a Logic 0 on Pins 18 and 20 of U14. To write data to the RAM, data on the data bus is written in the location selected by the address when Pins 18 and 20 are a Logic 0 and the WR control line is a Logic 0.

6.7 I/O DECODE

The I/O Decode is accomplished by using a 4 to 16 line decoder and associated qualifying logic. NSC800 addresses A6, A7 must be a Logic 1 and address A5 must be a Logic 0 for the enable at U5, Pin 19 to be a Logic 0. The other enable for U5 is a Logic 0 when the following conditions are met:

1) IO signal is Logic 1 and

2) RD or WR signal is a Logic 0.

The address lines select on output by forcing it to a Logic 0. Output 1 is used to read the status of the switches. Output 2 is used to activate the annicator. Output 3 through 5 are used to control the test device interface. Outputs 6, 7, 11 and 12 are reserved for future products. Outputs 8 through 10 are used to read data from the test device interface. Output 13 is used to control the LCD display. Output 14 is used to monitor the state of jumpers on the CPU board. Table 6.7 list the NSC800 I/O addresses and the corresponding I/O devices that are enabled.

TABLE 6.7
I/O MAP

NSC800 I/O ADDRESS	MODE	DEVICE
C0H	Input	Swit.
C2H	Input/Output	Ann
C4H	Output	Test Device I/F Channel E
C5H	Output	Test Device I/F Channel E
C6H	Output	Test Device I/F Channel F
C7H	Output	Test Device I/F Channel F
C8H	Output	Test Device I/F Channel G
C9H	Output	Test Device I/F Channel G
CEH	Input	Test Device I/F Channel E
D0H	Input	Test Device I/F Channel F
D2H	Input	Test Device I/F Channel G
D8H	Output	LCD Display
DAH	Input	Tests

6.8 JUMPER/SWITCH INPUTS

6.81 JUMPERS

The NSC800 Processor can read the state of the jumpers on the CPU board by placing the address ODAH on the address bus and executing an I/O read instruction.

6.82 SWITCH INPUTS

The NSC800 Processor can read the state of the switches on the front panel by placing the address OCOH on the address bus an executing and I/O read instruction. Each switch located on the front panel assembly is an SPST normally open switch. Upon closing the input to the Schmidt Trigger, U7 is grounded. The RC network on the input U7 is used for debounce purposes. The select "SEL" pushbutton is unique in that the output of U7 clocks the 7474, U6. The inverted output of U6 is connected to the D input. This causes the flip flop to toggle for every activation of the "SEL" key. The output of U6 is then sampled by the NSC800.

6.9 TEST DEVICE INTERFACE

The Test Device Interface connects the IC under test with the NSC800. The Interface provides a 24 bit channel labeled E0 through E7, F0 through F7 and G0 through G7 to the IC under test. Each channel is accessed as two (2) I/O addresses. Refer to Table 6.7 for the I/O address. Data from the 24 bit channel is monitored by the NSC800 through the octal bus buffers. U4-1 monitors the E section of the channel through the I/O address CEH. U12-1 monitors the F section of the channel through I/O address DOH. U12-2 monitors the G section of the channel through I/O address D2H. The operation of the Test Device Interface is proprietary and cannot be service separately.

6.10 ANNICATOR

The Annicator, or beep, is started by performing an I/O write to address C2H. The selected output of the decoder is gated with the WR control line causing the

the flip flop, U6, to be clocked on the trailing edge of WR control line. After clocking the output of the flip flop goes to a Logic 0 forcing the output the inverter U7 to a Logic 1. This action causes the transistor Q to turn on enabling the annicator. The beep is terminated by performing an I/O read to address C2H. The selected output of the decoder is gated with the RD control line. The gated output of U13 is connected clear input of U6 whose output is returned to the Logic 1 state. The outputs of U7 returns to the Logic 0 state and turns off Q1 and the annicator.

6.11 LCD INTERFACE

The LCD (Liquid Crystal Display) Interface contains four (4) sections. These are:

1) Display,

2) Display Controller U2,

3) Display Driver U3, U4 and

4) the Negative Voltage Supply U1.

6.111 DISPLAY

The LCD Display is organized as a sixteen (16) character display. Each character location is a 5 x 7 dot cell. All characters have common rows and each column is connected to a display driver.

6.112 DISPLAY CONTROLLER

The Display Controller is accessed by the NSC800 through I/O address D8H. Two (2) types of data are loaded into the controller. One (1) type of data is command and control information for the controllers. The other is data for the display. Table 6.111 is a list of codes sent to the Display Controller for initialization.

Table 6.112
LCD Display Controller Dritalization

DATA	FUNCTION
8BH	Reset Busy
70H	Reset Power Down Flag
6EH	Reset Rapid Load Flag
6DH	Reset Underline
6AH	Reset Cursor Visible Flag
68H	Reset Blank Display Flag
67H	Set Flag to Up
65H	Set Inc Flag
62H	Reset Blink Display
61H	Set Blink Cursor Flag
00H	Set Cursor to Leftmost Position
8AH	Clear Display

The display data is composed of ASCII data in the range of 20H to 5FH. The Display Controller produces an alternating voltage required for the display. Figure 6.112 shows typical waveforms for the row and column drivers.

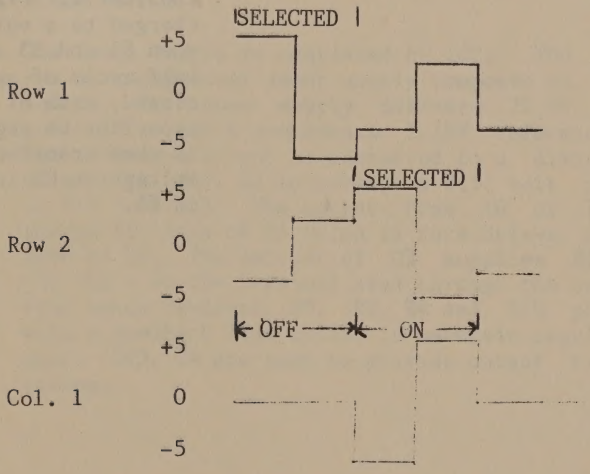


FIGURE 6.112

The Display Controller also drives the first twelve (12) columns.

6.113 DISPLAY DRIVER

The Display Driver drives the other columns in the LCD display. Data for column information is passed from U2, Pin 16 to U3, Pin 2. The serial data out of U3, Pin 6 is connected to serial data input of U4, Pin 2. Serial data is clocked through the drivers from U2, Pin 15. The minus reference voltage is connected to the drivers from U2, Pin 17. The backplane driver for the column drivers is supplied on U2, Pin 19.

6.114 NEGATIVE VOLTAGE SUPPLY

The Negative Voltage Supply is composed of C3, C4, C5, RP1 and U1. The heart of the supply is U1 which contains a series DC power supply regulator, RC oscillator, voltage level translator and four (4) output power MOS switches. The oscillator, when unloaded, oscillates at a nominal frequency of 10 kHz. The mode of operation of the device may best be understood by considering Figure 6.114. Capacitor C4 is charged to a voltage VCC for the half cycle when S1 and S3 are closed. During the second half cycle of operation, switches S2 and S4 are closed, with S1 and S3 open; thereby, shifting capacitor C4 negatively by VCC volts. Charge is then transferred from C4 to C5 such that the voltage on C5 is exactly VCC assuming no load on C5.

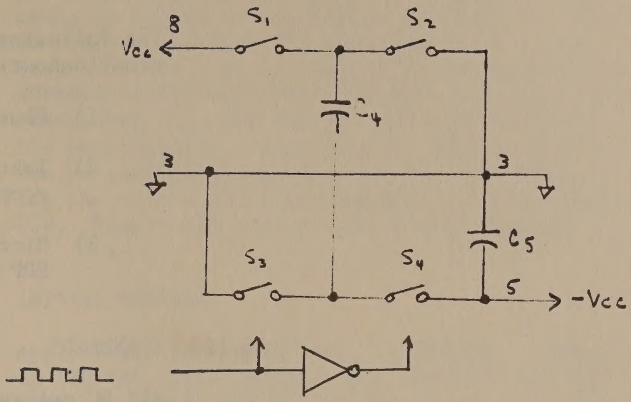


FIGURE 6.114 IDEALIZED 7660

6.115 POWER SUPPLY

The Power Supply is regulated by IC2. The IC has an independent power supply composed of D1 and C2. This power supply delivers 22.5V to power IC1. Pin 6 provides a 7.15V reference. The reference output is connected to a divider network R5, VR2, R3 to provide a 2.5 volt re-to Pin 5 of IC1. The output Pins 10 of IC1 drives the base of Q1 which in turn drives the base of Q2. The emitter of Q2 supplies five (5) volts to the terminal stud through the current sense resistor, R8. R2, R4 and R10 provide a feedback look to IC1 to maintain regulation. R13, C4 are used to provide output filtering.

6.12 TROUBLESHOOTING GUIDE

6.121 EQUIPMENTS REQUIRED

The following equipment will be useful in troubleshooting the ICT-101.

1) Fluke 73 DVM or equivalent
2) Tektronix Model 2215A oscilloscope or equivalent
3) Micro Sciences, Inc. ICT-101 with EDP and EDP3003.

6.122 STANDARDS

All DC voltages should be within + or - 10% of the voltage specified.

A Logic 0 level is defined as a voltage between 0.V and .8 volt.

A Logic 1 level is defined as a voltage between 2.0V and 5.0 volts.

Input voltage of 120VAC.

6.123 PRELIMINARY TEST

Before the unit is disassembled for troubleshooting, test and replace, if necessary, the fuse, F1, on the rear panel. Test for 5.0V on the rear panel connectors. If no voltage is present, continue; otherwise, check the unit for operation and return the unit to service, if operable.

6.124 UNIT DISASSEMBLY

To prepare the unit for testing, disconnect the unit from the power. Remove the four (4) Phillip's head screws from the bottom. Gently remove the top half of the cabinet.

6.125 VISUAL INSPECTION

Visually inspect the unit for burned components or traces on the PCB's. Check the fuse located on the Main PCB and replace if defective. If the fuse is defective, check for a shorted condition, less than five (5) ohms of resistance, between +5V and GND connections of the power supply. The CPU and display PCB's can be isolated from the power by disconnecting the ribbon cable assemblies on the Main PCB. Remove and replace the faulty assembly.

6.126 INITIAL TESTING

Apply power to the ICT-101. CAUTION: There is 120 VAC power exposed when the unit is operation. Check and adjust the power supply, VR2, for a voltage of 5.0 VDC at the output of the power supply.

6.127 ADVANCED TROUBLESHOOTING

Verify that the NSC800 is running by either the illumination of the "READY" lamp on the front panel or the presents of clock signals on the CLK or ALE Pins of the NSC800. If none are present, check the crystal or NSC800 Processor. If the unit fails to operate, remove the NSC800 Processor and use the ICT-101 with EDP and EDP 3003 to check the devices. Check the CPU and Main PCB on a standalone basis.

6.128 STANDALONE DIAGNOSTICS

The Internal Diagnostic can be executed continuously on power up by connecting the jumper W4 located on the CPU PCB. Upon power up, the NSC800 tests the RAM memory. If the RAM memory is defective, the annicator will sound. The display is not initialized and random data will appear on it. If the memory section of the diagnostic passes, the display is cleared. The message "TEST CLIP OFF/GO" message appears.

The next message "DIAGNOSTIC" shortly appears after the first message.

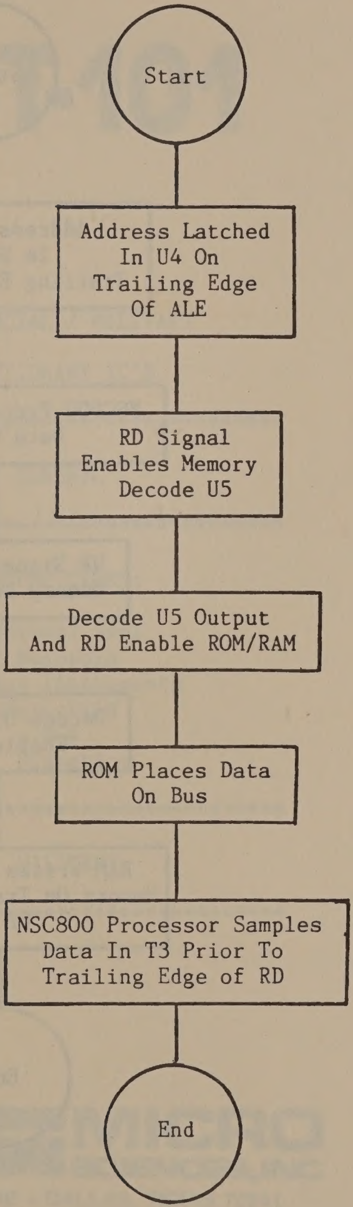
The Test Device Interface is then exercised. If all the signal paths of the interface are verified, the message "DIAGNOSTIC GOOD" appears in the display. The annicator sounds after every message. If the Test Device Interface is defective, then the message "INTERFACE IS BAD" is displayed continuously. The Test Device Interface is tested by writing all Logic 0 to the Test I/F Bus and reading the bus. The Bus is also tested by writing a Logic 1 to the Test I/F Bus and reading the bus.

6.129 POWER SUPPLY TROUBLESHOOTING

CAUTION: Hazardous voltages appear on the Power Supply. Use caution in troubleshooting the Power Supply. For proper operation of the Power Supply, check for a supply voltage of 22 VDC at Pins 11 and 12 of IC1. Check for a reference voltage of 2.5 Volts at Pin 5 of IC1. Check for a raw supply to the collector of Q2 of 11 - 12 volts. Check for base drive on Q2. If no voltage appears on the output of the power supply, check SCR1 for either on or shorted condition. Also, check the current foldback for an on condition represented by a differential voltage between IC1 Pins 2 and 3 of .65 Volt or greater.

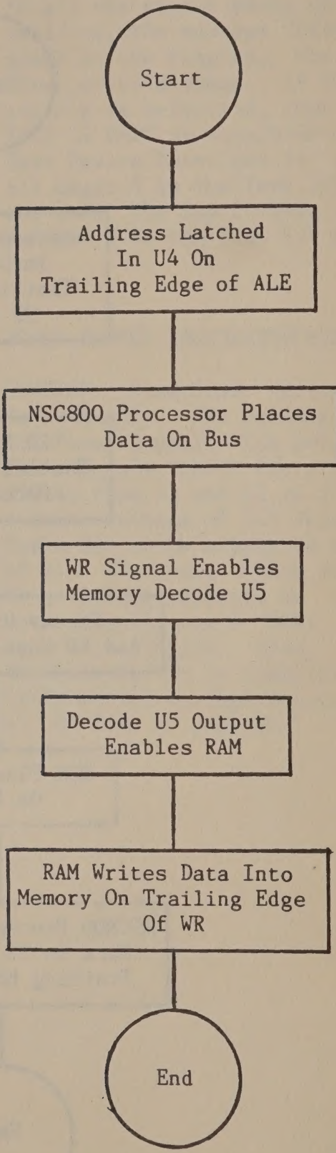
6.1210 TROUBLE SHOOTING ALGORYTHM

Basic Memory Read Cycle


Start
Address Latched In U4 On Trailing Edge Of ALE
RD Signal Enables Memory Decode U5
Decode U5 Output And RD Enable ROM/RAM
ROM Places Data On Bus
NSC800 Processor Samples Data In T3 Prior To Trailing Edge of RD
End

TROUBLE SHOOTING ALGORYTHM

Basic Memory Write Cycle


Start
Address Latched In U4 On Trailing Edge of ALE
NSC800 Processor Places Data On Bus
WR Signal Enables Memory Decode U5
Decode U5 Output Enables RAM
RAM Writes Data Into Memory On Trailing Edge Of WR
End

ICT-101

COMMERCIAL / MILITARY

DICTIONARY IC'S

****

GENERIC

****

MANUFACTURERS:

National Semi
Motorola
Texas Instruments
Fairchild
RCA
Signetics

****

MILITARY

****

MICRO
SCIENCES, INC
P.O. BOX 41540 • DALLAS, TEXAS 75241

5.51 STANDARD ICT-101 DICTIONARY

COMMERCIAL DIGITAL INTEGRATED CIRCUITS

GENERICS

I.C. PROCESS DESIGNATORS WHICH CAN BE TESTED INCLUDE:
ALS, AS, LS, S, H, HC, C, PC, F, L, & STD. TTL

IC #	IC FUNCTION	ICT-101 SIGNATURE
7400	QUAD 2 - INPUT GATE - NAND	7400
7402	QUAD 2 - INPUT NOR GATE	7402
7403	QUAD 2 - INPUT GATE NAND (OC)	7400*
7404	HEX INVERTER	7404
7405	HEX INVERTER (OC)	7404*
7406	30V - 40MA HEX INVERTER	7404*
7408	QUAD 2 - INPUT POSITIVE AND GATE	7408
7409	QUAD 2 - INPUT AND GATE (OC)	7408*
7410	TRIPLE 3 - INPUT NAND GATE	7410
7411	TRIPLE 3 - INPUT AND GATE	7411
7412	TRIPLE 3 - INPUT NAND GATE (OC)	7410*
7413	DUAL 4 - SCHMITT TRIGGER - NAND	7420*
7414	HEX SCHMITT TRIGGER - INV	7404*
7415	TRIPLE 3 - INPUT AND GATE (OC)	7411*
7416	15V - 40MA HEX INVERTER	7404*
7420	DUAL 4 - INPUT GATE - NAND	7420
7421	DUAL 4 - INPUT AND GATE	7421
7422	DUAL 4 - INPUT NAND GATE (OC)	7420*
7426	QUAD 2 - INPUT NAND GATE (HV)	7400*
7427	TRIPLE 3 - INPUT NOR GATE	7427
7428	QUAD 2 - INPUT NOR BUFFER	7402*
7430	8 - INPUT GATE - NAND	7430
7432	QUAD 2 - INPUT OR GATE	7432
7433	QUAD 2 - INPUT NOR BUFFER (OC)	7402*
7437	QUAD 2 - INPUT NAND BUFFER	7400*
7438	QUAD 2 - INPUT NAND BUFFER (OC)	7400*
7440	DUAL 4 - INPUT BUFFER-NAND	7420*
7442	BCD - TO - DECIMAL DECODER	7442
7445	BCD - TO - DECIMAL DECODER/DRIVER	7442*
7448	BCD-7 SEG DECODER/DRIVER	7448
7449	BCD-7 SEG DECODER/DRIVER	7448*
7474	DUAL D FLIP FLOP	7474
7486	QUAD EXCLUSIVE - OR GATE	7486
74107	DUAL J-K FLIP FLOP	74107

IC #		IC FUNCTION	ICT-101 SIGNATURE
74128		QUAD 2 - INPUT NOR GATE	7402*
74132		QUAD SCHMITT TRIGGER - NAND	7400*
74136		QUAD EX - OR GATE (OC)	7486*
74138		EXP SNGL 3/8 DECODER/MPLXR	74138
74139		EXP DUAL 2/4 DECODER/MPLXR	74139
74140		DUAL 4 - INPUT NAND DRIVER	7420*
74145		BCD - TO - DECIMAL DECODER/DRIVER	7442*
74147		10/4 PRIORITY ENCODER	74147
74151		8 LINE MULTIPLEXER	74151
74153		DUAL 4 - INPUT MULTIPLEXER/SEL	74153
74154		4/16 DECODER/DEMULTIPLEXER	74154
74157		QUAD 2/1 - INPUT MULTIPLEXER/SEL	74157
74158		QUAD 2/1 - INPUT MULTIPLEXER/SEL	74157*
74160		PRESET DECADE CTR	74160
74161		PRESET BINARY CTR	74161
74162		PRESET DECADE CTR (SNY CLR)	74160*
74163		PRESET DECADE CTR (SYN CLR)	74161*
74173		QUAD "D" REG (TS)	74173
74174		HEX D FLIP FLOP	74174
74175		QUAD D FLIP FLOP	74175
74192		UP/DOWN DECADE COUNTER	74192
74193		UP/DOWN BINARY COUNTER	74193
74240		OCTAL INV BUS/LINE DRIVER	74240/41/44
74241		TRI-STATE OCTAL BUS/LINE DRIVER	74240/41/44
74243		BUS TRANCEIVER-TS	74243
74244		TRI-STATE OCTAL DRIVER (NON-INV)	74244
74245	X	OCTAL BUS TRANSCEIVER-TS	74245
74248		BCD-7 SEG DECODER/DRIVER	74248
74251		DATA SELECTOR/MPLXR-TS	74151*
74253		DUAL 4 - IN MUX (TS)	74153*
74257		QUAD 2 - IN SEL/MPLXR-TS	74157*
74258		QUAD 2 - IN DATA SEL/MPLXR - TS	74157*
74259		8 - BIT ADDRESSABLE LATCH	74259
74266		QUAD EX - NOR GATE	74266
74299	X	8-BIT BIDI SH/STR REG	74299
74354	X	8/1 SEL MULT TRANS REG	74354
74356	X	8/1 SEL MULT EDGE TRIG	74354*
74365		HEX BUS DRIVER (TS)	74365
74366		HEX BUS DRIVER (TS) - INV	74366
74367		HEX BUFF (4-2) (TS)	74367
74368		HEX INV (4-2) (TS)	74368
74373	X	OCTAL D LATCH - TS	74373
74374		TRI-STATE OCTAL D FLIP FLOP	74374
74375	X	QUAD LATCH - BISTABLE	74375
74533	X	OCTAL D TRANS LATCH	74373*
74534	X	OCTAL D EDGE TRIG FLIP FLOP	74373*
74563	X	OCTAL D TRANS LATCH - I/O	74563

IC #		IC FUNCTION	ICT-101 SIGNATURE
74574	X	OCTAL D EDGE TRIG FLIP FLOP	74563*
74640	X	OCTAL BUS TRANSCEIVER - TS	74245*
74643	X	OCTAL BUS TRANSCEIVER - TS	74245*
74646	X	OCTAL BUS TRANS/REGISTER - TS	74646
74648	X	OCTAL BUS TRANS/REGISTER - TS	74646*
74658	X	8 BIT MAG COMPARATOR	74658
741004		HEX INVERTING BUFFER (TTL INT)	7404*
741010		TRIPLE 3 - IN NAND	7410*
8095		TRI-STATE HEX BUFFER	74365*
8096		TRI-STATE HEX INVERTING BUFFER	74366*
8097		TRI-STATE HEX BUFFER	74367*
8098		TRI-STATE HEX INVERTING BUFFER	74368*

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4001	BUFFERED QUAD 2 - INPUT NOR GATE	4001
4002	BUFFERED DUAL 4 - INPUT NOR GATE	4002
4011	BUFFERED QUAD 2 - INPUT NAND GATE	4011
4012	BUFFERED DUAL 4 - INPUT NAND GATE	4012
4013	DUAL D FLIP FLOP	4013
4015	DUAL 4-BIT SHIFT REGISTER	4015
4017	DECADE COUNTER/DIVIDER	4017
4020	14 - STAGE RIPPLE - CARRY BI - COUNTER	4020
4022	DIVIDE BY 8 COUNTER/DIVIDER	4022
4023	BUFFERED TRIPLE 3 - INPUT NAND	4023
4024	7 BIT BINARY COUNTER	4024
4025	BUFFERED TRIPLE 3 - INPUT NOR	4025
4028	BCD - TO - DECIMAL DECODER	4028
4030	QUAD EX - OR GATE	4030
4040	12 - BIT BINARY RIPPLE COUNTER	4040
4043	QUAD TS NOR R/S LATCH	4043
4044	QUAD TS NAND R/S LATCH	4044
4069	HEX INVERTER	7404*
4070	QUAD EXCLUSIVE OR GATE	4030*
4071	BUFFERED QUAD 2 - INPUT OR GATE	4071
4072	BUFFERED DUAL 4 - INPUT OR GATE	4072
4073	TRIPLE 3 - INPUT AND GATE	4073
4075	TRIPLE 3 - INPUT OR GATE	4075
4081	BUFFERED QUAD 2 - INPUT AND GATE	4081
4082	BUFFERED DUAL 4 - INPUT AND GATE	4082
4093	QUAD 2 - INPUT NAND SCHMITT TRIGGER	4011*
40160	PRESET DECADE CTR	74160
40161	PRESET BINARY CTR	74161
40162	PRESET DECADE CTR (SNY CLR)	74160*
40163	PRESET DECADE CTR (SYN CLR)	74161*
40174	HEX D FLIP FLOP	74174*
40175	QUAD D FLIP FLOP	74175*

IC #		IC FUNCTION	ICT-101 SIGNATURE
40192		DECADE UP/DOWN COUNTER	74192*
40193		BINARY UP/DOWN COUNTER	74193*
4502		STROBED - HEX INV/BUFFER	4502
4503		TRI-STATE HEX BUFFER	74C367*
4511		BCD - TO - 7 SEG DECODER DRIVER	4511
4512	X	8 CHANNEL DATA SELECTOR	4512
4515	X	4 BIT LATCH - 4/16 LINE	4515
4519	X	4 BIT AND/OR SELECTOR	4519
4520	X	DUAL SYNC UP COUNTER	4520
4543		BCD - TO - 7 SEG DECODER (LCD)	4543
4723	X	DUAL 4 BIT ADDRESS LATCH	4723

* ALTHOUGH THESE IC'S TEST AS A SIGNATURE DIFFERENT FROM THEIR OWN, IT IS A VALID TEST. THE FUNCTIONS OF THE IC'S ARE THE SAME AS THE GENERIC NUMBERS THAT ARE DISPLAYED ON THE ICT-101.

X THIS SIGNATURE IS AVAILABLE WHEN THE ICT-EX204 OPTION IS INSTALLED.

STANDARD ICT-101 DICTIONARY

COMMERCIAL DIGITAL INTEGRATED CIRCUITS

NATIONAL

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: J, N.

IC#	FUNCTION	ICT-101 SIGNATURE
DM7400	QUAD 2 - INPUT GATE	7400
DM7402	QUAD 2 - INPUT NOR GATE	7402
DM7403	QUAD 2 - INPUT GATE (OPEN COLLECTOR)	7400
DM7404	HEX INVERTER	7404
DM7405	HEX INVERTER (OPEN COLLECTOR)	7404
DM7406	30V - 40MA HEX INVERTER	7404
DM7408	QUAD 2 - INPUT POSITIVE AND GATE	7408
DM7409	QUAD 2 - INPUT AND GATE (OC)	7408
DM7410	TRIPLE 3 - INPUT NAND GATE	7410
DM7411	TRIPLE 3 - INPUT AND GATE	7411
DM7413	DUAL SCHMITT TRIGGER	7420
DM7414	HEX SCHMITT TRIGGER	7404
DM7416	15V - 40MA HEX INVERTER	7404
DM7420	DUAL 4 - INPUT GATE	7420
DM7426	QUAD 2 - INPUT NAND GATE (HV)	7400
DM7427	TRIPLE 3 - INPUT NOR GATE	7427
DM7430	8 - INPUT GATE	7430
DM7432	QUAD 2 - INPUT OR GATE	7432
DM7437	QUAD 2 - INPUT NAND BUFFER	7400
DM7438	QUAD 2 - INPUT NAND BUFFER (OC)	7400
DM7440	DUAL 4 - INPUT BUFFER	7420
DM7442	BCD - TO - DECIMAL DECODER	7442
DM7445	BCD - TO - DECIMAL DECODER/DRIVER	7442
DM7448	BCD - 7 SEG DECODER/DRIVER (ACTIVE HI)	7448
DM7474	DUAL D FLIP FLOP	7474
DM7486	QUAD EXCLUSIVE - OR GATE	7486
DM74107	DUAL J-K FLIP FLOP	74107
DM74132	QUAD SCHMITT TRIGGER	7400
DM74145	BCD - TO - DECIMAL DECODER/DRIVER	7442
DM74147	10/4 PRIORITY ENCODER	74147
DM74151	8 LINE MULTIPLEXER	74151
DM74153	DUAL 4 - INPUT MULTIPLEXER	74153
DM74154	4/16 DECODER/DEMULTIPLEXER (FSC 9311)	75154
DM74157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157
DM74158	QUAD 2 - INPUT MULTIPLEXER (9322)	74157

IC#	FUNCTION	ICT-101 SIGNATURE
DM74160	PRESET DECADE CTR	74160
DM74161	PRESET BINARY CTR	74161
DM74162	PRESET DECADE CTR (SNY CLR)	74160
DM74163	PRESET DECADE CTR (SYN CLR)	74161
DM74173	QUAD "D" REG (TS)	74173
DM74174	HEX "D" F/F	74174
DM74175	QUAD "D" F/F	74175
DM74192	U/D DECADE CTR	74192
DM74193	U/D BINARY CTR	74193
DM74251	TRI-STATE MULTIPLEXER	74151
DM74365	HEX BUFF (TS)	74365
DM74366	HEX INV (TS)	74366
DM74367	HEX BUFF (4-2) (TS)	74367
DM74368	HEX INV (4-2) (TS)	74368

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: J, N.

DM74H00	QUAD 2 - INPUT GATE	7400
DM74H04	HEX INVERTER	7404
DM74H08	QUAD 2 - INPUT POSITIVE AND GATE	7408
DM74H10	TRIPLE 3 - INPUT NAND GATE	7410
DM74H11	TRIPLE 3 - INPUT AND GATE	7411
DM74H20	DUAL 4 - INPUT GATE	7420
DM74H21	DUAL 4 - INPUT AND GATE	7421
DM74H30	8 - INPUT GATE	7430
DM74H40	DUAL 4 - INPUT BUFFER	7420
DM74H74	DUAL D FLIP FLOP	7474

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: J, N.

DM74ALS00	QUAD 2 - INPUT GATE	7400
DM74ALS02	QUAD 2 - INPUT NOR GATE	7402
DM74ALS03	QUAD 2 - INPUT GATE (OPEN COLLECTOR)	7400
DM74ALS04	HEX INVERTER	7404
DM74ALS05	HEX INVERTER (OPEN COLLECTOR)	7404
DM74ALS08	QUAD 2 - INPUT POSITIVE AND GATE	7408
DM74ALS09	QUAD 2 - INPUT AND GATE (OC)	7408
DM74ALS10	TRIPLE 3 - INPUT NAND GATE	7410
DM74ALS11	TRIPLE 3 - INPUT AND GATE	7411
DM74ALS15	TRIPLE 3 - INPUT AND GATE (OC)	7411
DM74ALS20	DUAL 4 - INPUT GATE	7420
DM74ALS21	DUAL 4 - INPUT AND GATE	7421
DM74ALS22	DUAL 4 - INPUT NAND GATE (OC)	7420
DM74ALS27	TRIPLE 3 - INPUT NOR GATE	7427
DM74ALS28	QUAD 2 - INPUT NOR BUFFER	7402

IC#	FUNCTION	ICT-101 SIGNATURE
DM74ALS30	8 - INPUT GATE	7430
DM74ALS32	QUAD 2 - INPUT OR GATE	7432
DM74ALS33	QUAD 2 - INPUT NOR BUFFER (OC)	7402
DM74ALS37	QUAD 2 - INPUT NAND BUFFER	7400
DM74ALS38	QUAD 2 - INPUT NAND BUFFER (OC)	7400
DM74ALS40	DUAL 4 - INPUT BUFFER	7420
DM74ALS74	DUAL D FLIP FLOP	7474

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
AJ, AN.

DM74L42	BCD - TO - DECIMAL DECODER	7442
DM74L157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: J, N.

DM74L00	QUAD 2 - INPUT GATE	7400
DM74L02	QUAD 2 - INPUT NOR GATE	7402
DM74L03	QUAD 2 - INPUT GATE (OPEN COLLECTOR)	7400
DM74L04	HEX INVERTER	7404
DM74L05	HEX INVERTER (OPEN COLLECTOR)	7404
DM74L08	QUAD 2 - INPUT POSITIVE AND GATE	7408
DM74L10	TRIPLE 3 - INPUT NAND GATE	7410
DM74L11	TRIPLE 3 - INPUT AND GATE	7411
DM74L20	DUAL 4 - INPUT GATE	7420
DM74L30	8 - INPUT GATE	7430
DM74L74	DUAL D FLIP FLOP	7474
DM74L86	QUAD EXCLUSIVE - OR GATE	7486
DM74L192	U/D DECADE CTR	74192
DM74L193	U/D BINARY CTR	74193

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
AJ, AN, J, N.

DM74LS74	DUAL D FLIP FLOP	7474
DM74LS107	DUAL J-K FLIP FLOP	74107
DM74LS160	PRESET DECADE CTR	74160
DM74LS161	PRESET BINARY CTR	74161
DM74LS162	PRESET DECADE CTR (SNY CLR)	74160
DM74LS163	PRESET DECADE CTR (SYN CLR)	74161
DM74LS366	HEX INV (TS)	74366
DM74LS367	HEX BUFF (4-2) (TS)	74367

IC#	FUNCTION	ICT-101 SIGNATURE
	THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: AN, J, N.	
DM74LS173	QUAD "D" REG (TS)	74173
DM74LS368	HEX INV (4-2) (TS)	74368
	THE FOLLOWING IC INCLUDES THESE SUFFIXES: BJ, BN, J, N.	
DM74LS257	QUAD 2 - IN MUX	74157
	THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: J, N.	
DM74LS02	QUAD 2 - INPUT NOR GATE	7402
DM74LS03	QUAD 2 - INPUT GATE (OPEN COLLECTOR)	7400
DM74LS04	HEX INVERTER	7404
DM74LS05	HEX INVERTER (OPEN COLLECTOR)	7404
DM74LS08	QUAD 2 - INPUT POSITIVE AND GATE	7408
DM74LS09	QUAD 2 - INPUT AND GATE (OC)	7408
DM74LS10	TRIPLE 3 - INPUT NAND GATE	7410
DM74LS11	TRIPLE 3 - INPUT AND GATE	7411
DM74LS12	TRIPLE 3 - INPUT NAND GATE (OC)	7410
DM74LS13	DUAL SCHMITT TRIGGER	7420
DM74LS14	HEX SCHMITT TRIGGER	7404
DM74LS15	TRIPLE 3 - INPUT AND GATE (OC)	7411
DM74LS20	DUAL 4 - INPUT GATE	7420
DM74LS21	DUAL 4 - INPUT AND GATE	7421
DM74LS22	DUAL 4 - INPUT NAND GATE (OC)	7420
DM74LS26	QUAD 2 - INPUT NAND GATE (HV)	7400
DM74LS27	TRIPLE 3 - INPUT NOR GATE	7427
DM74LS30	8 - INPUT GATE	7430
DM74LS32	QUAD 2 - INPUT OR GATE	7432
DM74LS37	QUAD 2 - INPUT NAND BUFFER	7400
DM74LS38	QUAD 2 - INPUT NAND BUFFER (OC)	7400
DM74LS40	DUAL 4 - INPUT BUFFER	7420
DM74LS42	BCD - TO - DECIMAL DECODER	7442
DM74LS48	BCD - 7 SEG DECODER/DRIVER (ACTIVE HI)	7448
DM74LS86	QUAD EXCLUSIVE - OR GATE	7486
DM74LS132	QUAD SCHMITT TRIGGER	7400
DM74LS136	QUAD EX - OR GATE	7486
DM74LS138	EXP SNGL 3/8 DECODER	74138
DM74LS139	EXP DUAL 2/4 DECODER	74139
DM74LS151	8 LINE MULTIPLEXER	74151

IC#	FUNCTION	ICT-101 SIGNATURE
DM74LS153	DUAL 4 - INPUT MULTIPLEXER	74153
DM74LS154	4/16 DECODER/DEMULTIPLEXER (FSC 9311)	75154
DM74LS157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157
DM74LS174	HEX "D" F/F	74174
DM74LS175	QUAD "D" F/F	74175
DM74LS192	U/D DECADE CTR	74192
DM74LS193	U/D BINARY CTR	74193
DM74LS240	OCTAL INV BUS/LINE DRIVER	74240
DM74LS241	TRI-STATE OCTAL BUS/LINE DRIVER	74241
DM74LS244	TRI-STATE OCTAL DRIVER (NON-INVERTING)	74244
DM74LS251	TRI-STATE MULTIPLEXER	74151
DM74LS253	DUAL 4 - IN MUX (TS)	74153
DM74LS259	8 - BIT ADDRESSABLE LATCH	74259
DM74LS266	QUAD EX - NOR GATE	74266
DM74LS365	HEX BUFF (TS)	74365
DM74LS374	TRI-STATE OCTAL D FLIP FLOP	74374

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: J, N.

DM74S00	QUAD 2 - INPUT GATE	7400
DM74S02	QUAD 2 - INPUT NOR GATE	7402
DM74S03	QUAD 2 - INPUT GATE (OPEN COLLECTOR)	7400
DM74S04	HEX INVERTER	7404
DM74S05	HEX INVERTER (OPEN COLLECTOR)	7404
DM74S08	QUAD 2 - INPUT POSITIVE AND GATE	7408
DM74S09	QUAD 2 - INPUT AND GATE (OC)	7408
DM74S10	TRIPLE 3 - INPUT NAND GATE	7410
DM74S11	TRIPLE 3 - INPUT AND GATE	7411
DM74S15	TRIPLE 3 - INPUT AND GATE (OC)	7411
DM74S20	DUAL 4 - INPUT GATE	7420
DM74S22	DUAL 4 - INPUT NAND GATE (OC)	7420
DM74S30	8 - INPUT GATE	7430
DM74S32	QUAD 2 - INPUT OR GATE	7432
DM74S40	DUAL 4 - INPUT BUFFER	7420
DM74S74	DUAL D FLIP FLOP	7474
DM74S86	QUAD EXCLUSIVE - OR GATE	7486
DM74S136	QUAD EX - OR GATE	7486
DM74S138	EXP SNGL 3/8 DECODER	74138
DM74S139	EXP DUAL 2/4 DECODER	74139
DM74S140	DUAL 4 - INPUT NAND DRIVER	7420
DM74S151	8 LINE MULTIPLEXER	74151
DM74S153	DUAL 4 - INPUT MULTIPLEXER	74153
DM74S157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157
DM74S160	PRESET DECADE CTR	74160
DM74S161	PRESET BINARY CTR	74161
DM74S162	PRESET DECADE CTR (SNY CLR)	74160

IC#	FUNCTION	ICT-101 SIGNATURE
DM74S163	PRESET DECADE CTR (SYN CLR)	74161
DM74S174	HEX "D" F/F	74174
DM74S175	QUAD "D" F/F	74175
DM74S251	TRI-STATE MULTIPLEXER	74151
DM74S253	DUAL 4 - IN MUX (TS)	74153
DM74S257	QUAD 2 - IN MUX	74157
DM74S374	TRI-STATE OCTAL D FLIP FLOP	74374

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THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: J, N.

IC#	FUNCTION	ICT-101 SIGNATURE
MM74C00	QUAD 2 - INPUT NAND GATE	74C00
MM74C02	QUAD 2 - INPUT NOR GATE	74C02
MM74C04	HEX INVERTER	74C04
MM74C08	QUAD 2 - INPUT AND GATE	74C08
MM74C10	TRIPLE 3 - INPUT NAND GATE	74C10
MM74C20	DUAL 4 - INPUT NAND GATE	74C20
MM74C30	8 - INPUT AND GATE	74C30
MM74C32	QUAD 2 - INPUT OR GATE	74C32
MM74C42	BCD - TO - DECIMAL DECODER	74C42
MM74C48	BCD - TO - 7 SEGMENT DECODER DRIVER	74C48
MM74C73	DUAL J-K FLIP FLOP	74C48
MM74C74	DUAL D FLIP FLOP	74C74
MM74C107	DUAL J-K FLIP FLOP	74C107
MM74C151	8 - CHANNEL DIGITAL MULTIPLEXER	74C151
MM74C154	4 LINE TO 16 LINE DECODER	74C154
MM74C157	QUAD 2 - INPUT MULTIPLEXER	74C157
MM74C160	SYNCHRONOUS DECADE COUNTER	74C160
MM74C161	SYNCHRONOUS BINARY COUNTER	74C161
MM74C162	FULLY SYNCHRONOUS DECADE COUNTER	74C160
MM74C163	FULLY SYNCHRONOUS BINARY COUNTER	74C161
MM74C173	TRI-STATE QUAD LATCH	74C173
MM74C174	HEX D FLIP FLOP	74C174
MM74C175	QUAD D FLIP FLOP	74C175
MM74C192	DECADE UP/DOWN COUNTER	74C192
MM74C193	BINARY UP/DOWN COUNTER	74C193
MM74C221	DUAL MONOSTABLE MULTIVIBRATER (SCH TRG)	74C123
MM74C240	TRI-STATE OCTAL BUFFERS	74C240
MM74C244	TRI-STATE OCTAL BUFFER	74C244
MM74C374	TRI-STATE OCTAL D FLIP FLOP	74C374
MM74C901	HEX INVERTING BUFFER (TTL INTERFACE)	74C04

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: J, N.

IC#	FUNCTION	ICT-101 SIGNATURE
MM74HC00	QUAD 2 - INPUT NAND GATE	74C00

IC#	FUNCTION	ICT-101 SIGNATURE
MM74HC02	QUAD 2 - INPUT NOR GATE	74C02
MM74HC04	HEX INVERTER	74C04
MM74HC08	QUAD 2 - INPUT AND GATE	74C08
MM74HC10	TRIPLE 3 - INPUT NAND GATE	74C10
MM74HC11	3 - INPUT AND GATE	74C11
MM74HC20	DUAL 4 - INPUT NAND GATE	74C20
MM74HC27	TRIPLE 3 - INPUT NOR GATE	74C27
MM74HC30	8 - INPUT AND GATE	74C30
MM74HC32	QUAD 2 - INPUT OR GATE	74C32
MM74HC42	BCD - TO - DECIMAL DECODER	74C42
MM74HC73	DUAL J-K FLIP FLOP	74C48
MM74HC74	DUAL D FLIP FLOP	74C74
MM74HC107	DUAL J-K FLIP FLOP	74C107
MM74HC138	3 - TO - 8 LINE DECODER	74C138
MM74HC139	DUAL 2 - TO - 4 LINE DECODER	74C139
MM74HC147	10 TO 4 LINE ENCODER	74C147
MM74HC151	8 - CHANNEL DIGITAL MULTIPLEXER	74C151
MM74HC153	DUAL 4 - INPUT MULTIPLEXER	74C153
MM74HC154	4 LINE TO 16 LINE DECODER	74C154
MM74HC157	QUAD 2 - INPUT MULTIPLEXER	74C157
MM74HC160	SYNCHRONOUS DECADE COUNTER	74C160
MM74HC161	SYNCHRONOUS BINARY COUNTER	74C161
MM74HC162	FULLY SYNCHRONOUS DECADE COUNTER	74C160
MM74HC163	FULLY SYNCHRONOUS BINARY COUNTER	74C161
MM74HC174	HEX D FLIP FLOP	74C174
MM74HC175	QUAD D FLIP FLOP	74C175
MM74HC240	TRI-STATE OCTAL BUFFERS	74C240
MM74HC241	OCTAL BUFFER	74C241
MM74HC244	TRI-STATE OCTAL BUFFER	74C244
MM74HC251	8 - CHANNEL TRI-STATE MULTIPLEXER	74C151
MM74HC253	DUAL 4 - IN MUX (TS)	74C153
MM74HC257	QUAD 2 - IN MUX	74C157
MM74HC259	8 - BIT ADDRESSABLE LATCH	74C259
MM74HC266	QUAD EX - NOR GATE	74C266
MM74HC365	HEX BUFF (TS)	74C365
MM74HC366	HEX INV (TS)	74C366
MM74HC367	HEX BUFF (4-2) (TS)	74C367
MM74HC368	HEX INV (4-2) (TS)	74C368
MM74HC374	TRI-STATE OCTAL D FLIP FLOP	74C374

THE FOLLOWING IC'S INCLUDE THIS SUFFIX: N.

MM74HC192	DECADE UP/DOWN COUNTER	74C192
MM74HC193	BINARY UP/DOWN COUNTER	74C193

IC#	FUNCTION	ICT-101 SIGNATURE

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
JI, J, NI, N.

MM74PC00	QUAD 2 - INPUT NAND GATE	74C00
MM74PC02	QUAD 2 - INPUT NOR GATE	74C02
MM74PC04	HEX INVERTER	74C04
MM74PC08	QUAD 2 - INPUT AND GATE	74C08
MM74PC32	QUAD 2 - INPUT OR GATE	74C32
MM74PC74	DUAL D FLIP FLOP	74C74
MM74PC138	3 - TO - 8 LINE DECODER	74C138

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THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
BCJ, BCN, BMJ.

CD4013	DUAL D FLIP FLOP	4013
CD4017	DECADE COUNTER/DIVIDER	4017
CD4020	14 - STAGE RIPPLE - CARRY BINARY COUNTER	4020
CD4022	DIVIDE BY 8 COUNTER/DIVIDER	4022
CD4024	7 BIT BINARY COUNTER	4024
CD4028	BCD - TO - DECIMAL DECODER	4028
CD4040	12 - BIT BINARY RIPPLE COUNTER	4040
CD4052	DIFFERENTIAL 4 - CHANNEL MULTIPLEXER	4052
CD4070	QUAD EXCLUSIVE OR GATE	4030
CD4071	BUFFERED QUAD 2 - INPUT OR GATE	4071
CD4072	BUFFERED DUAL 4 - INPUT OR GATE	4072
CD4073	TRIPLE 3 - INPUT AND GATE	4073
CD4081	BUFFERED QUAD 2 - INPUT AND GATE	4081
CD4082	BUFFERED DUAL 4 - INPUT AND GATE	4082
CD4093	QUAD 2 - INPUT NAND SCHMITT TRIGGER	4081
CD4503	TRI-STATE HEX BUFFER	74C367
CD4511	BCD - TO - 7 SEGMENT DECODER DRIVER	74C48
CD4543	BCD - TO -7 SEGMENT DECODER (LCD)	74C48
CD40174	HEX D FLIP FLOP	74C174
CD40175	QUAD D FLIP FLOP	74C175
CD40192	DECADE UP/DOWN COUNTER	74C192
CD40193	BINARY UP/DOWN COUNTER	74C193

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
BCJ, BCN, BMJ, CJ, CN, MJ.

CD4001	BUFFERED QUAD 2 - INPUT NOR GATE	4001
CD4011	BUFFERED QUAD 2 - INPUT NAND GATE	4011
CD4012	BUFFERED DUAL 4 - INPUT NAND GATE	4012
CD4023	BUFFERED TRIPLE 3 - INPUT NAND GATE	4023

IC#	FUNCTION	ICT-101 SIGNATURE
CD4025	BUFFERED TRIPLE 3 - INPUT NOR GATE	4025

THE FOLLOWING IC INCLUDES THESE SUFFIXES:
BCJ, BCN, BMJ, CN, MJ.

CD4002	BUFFERED DUAL 4 - INPUT NOR GATE	4002

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
CJ, CN, MJ.

CD4030	QUAD EX - OR GATE	4030
CD4069	HEX INVERTER	74C04

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
J, N.

MM74HC4002	BUFFERED DUAL 4 - INPUT NOR GATE	4002
MM74HC4020	14 - STAGE RIPPLE - CARRY BINARY COUNTER	4020
MM74HC4040	12 - BIT BINARY RIPPLE COUNTER	4040
MM74HC4075	TRIPLE 3 - INPUT OR GATE	4075

STANDARD ICT-101 DICTIONARY

COMMERCIAL DIGITAL INTEGRATED CIRCUITS

MOTOROLA

IC#	FUNCTION	ICT-101 SIGNATURE

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: J,N.

MC74F00	QUAD 2 - INPUT GATE	7400
MC74F02	QUAD 2 - INPUT NOR GATE	7402
MC74F04	HEX INVERTER	7404
MC74F08	QUAD 2 - INPUT POSITIVE AND GATE	7408
MC74F10	TRIPLE 3 - INPUT NAND GATE	7410
MC74F11	TRIPLE 3 - INPUT AND GATE	7411
MC74F20	DUAL 4 - INPUT GATE	7420
MC74F32	QUAD 2 - INPUT OR GATE	7432
MC74F253	DUAL 4 - IN MUX (TS)	74153

MC74F74N	DUAL D FLIP FLOP	7474

THE FOLLOWING IC'S INCLUDE THIS SUFFIX: N

SN74ALS74	DUAL D FLIP FLOP	7474
SN74ALS240	OCTAL INV BUS/LINE DRIVER	74240
SN74ALS241	TRI-STATE OCTAL BUS/LINE DRIVER	74241
SN74ALS244	TRI-STATE OCTAL DRIVER (NON-INV)	74244

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
N, ND, NDS, NS.

SN74ALS00	QUAD 2 - INPUT GATE	7400
SN74ALS03	QUAD 2 - INPUT GATE (OPEN COLLECTOR)	7400
SN74ALS04	HEX INVERTER	7404
SN74ALS05	HEX INVERTER (OPEN COLLECTOR)	7404
SN74ALS08	QUAD 2 - INPUT POSITIVE AND GATE	7408
SN74ALS10	TRIPLE 3 - INPUT NAND GATE	7410
SN74ALS11	TRIPLE 3 - INPUT AND GATE	7411
SN74ALS12	TRIPLE 3 - INPUT NAND GATE (OC)	7410
SN74ALS15	TRIPLE 3 - INPUT AND GATE (OC)	7411
SN74ALS20	DUAL 4 - INPUT GATE	7420

IC#	FUNCTION	ICT-101 SIGNATURE
SN74ALS21	DUAL 4 - INPUT AND GATE	7421
SN74ALS22	DUAL 4 - INPUT NAND GATE (OC)	7420
SN74ALS27	TRIPLE 3 - INPUT NOR GATE	7427
SN74ALS28	QUAD 2 - INPUT NOR BUFFER	7402
SN74ALS32	QUAD 2 - INPUT OR GATE	7432
SN74ALS157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157
SN74ALS160	PRESET DECADE CTR	74160
SN74ALS161	PRESET BINARY CTR	74161
SN74ALS162.	PRESET DECADE CTR (SNY CLR)	74160
SN74ALS163	PRESET DECADE CTR (SYN CLR)	74161
SN74ALS192	U/D DECADE CTR	74192
SN74ALS193	U/D BINARY CTR	74193

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
AJ, AJD, AJDS, AJS, AN, AND, ANDS, ANS.

SN74LS74	DUAL D FLIP FLOP	7474
SN74LS107	DUAL J-K FLIP FLOP	74107
SN74LS160	PRESET DECADE CTR	74160
SN74LS161	PRESET BINARY CTR	74161
SN74LS162	PRESET DECADE CTR (SNY CLR)	74160
SN74LS163	PRESET DECADE CTR (SYN CLR)	74161
SN74LS173	QUAD "D" REG (TS)	74173
SN74LS257	QUAD 2 - IN MUX	74157
SN74LS365	HEX BUFF (TS)	74365
SN74LS366	HEX INV (TS)	74366
SN74LS367	HEX BUFF (4-2) (TS)	74367
SN74LS368	HEX INV (4-2) (TS)	74368

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
J, JD, JDS, JS, N, ND, NDS, NS.

SN74LS00	QUAD 2 - INPUT GATE	7400
SN74LS02	QUAD 2 - INPUT NOR GATE	7402
SN74LS03	QUAD 2 - INPUT GATE (OPEN COLLECTOR)	7400
SN74LS04	HEX INVERTER	7404
SN74LS05	HEX INVERTER (OPEN COLLECTOR)	7404
SN74LS08	QUAD 2 - INPUT POSITIVE AND GATE	7408
SN74LS09	QUAD 2 - INPUT AND GATE (OC)	7408
SN74LS10	TRIPLE 3 - INPUT NAND GATE	7410
SN74LS11	TRIPLE 3 - INPUT AND GATE	7411
SN74LS12	TRIPLE 3 - INPUT NAND GATE (OC)	7410
SN74LS13	DUAL SCHMITT TRIGGER	7420
SN74LS14	HEX SCHMITT TRIGGER	7404
SN74LS15	TRIPLE 3 - INPUT AND GATE (OC)	7411

IC#	FUNCTION	ICT-101 SIGNATURE
SN74LS20	DUAL 4 - INPUT GATE	7420
SN74LS21	DUAL 4 - INPUT AND GATE	7421
SN74LS22	DUAL 4 - INPUT NAND GATE (OC)	7420
SN74LS26	QUAD 2 - INPUT NAND GATE (HV)	7400
SN74LS27	TRIPLE 3 - INPUT NOR GATE	7427
SN74LS28	QUAD 2 - INPUT NOR BUFFER	7402
SN74LS30	8 - INPUT GATE	7430
SN74LS32	QUAD 2 - INPUT OR GATE	7432
SN74LS33	QUAD 2 - INPUT NOR BUFFER (OC)	7402
SN74LS37	QUAD 2 - INPUT NAND BUFFER	7400
SN74LS38	QUAD 2 - INPUT NAND BUFFER (OC)	7400
SN74LS40	DUAL 4 - INPUT BUFFER	7420
SN74LS42	BCD - TO - DECIMAL DECODER	7442
SN74LS48	BCD - 7 SEG DECODER/DRIVER (ACTIVE HI)	7448
SN74LS86	QUAD EXCLUSIVE - OR GATE	7486
SN74LS132	QUAD SCHMITT TRIGGER	7400
SN74LS136	QUAD EX - OR GATE	7486
SN74LS138	EXP SNGL 3/8 DECODER	74138
SN74LS139	EXP DUAL 2/4 DECODER	74139
SN74LS145	BCD - TO - DECIMAL DECODER/DRIVER	7442
SN74LS147	10/4 PRIORITY ENCODER	74147
SN74LS151	8 LINE MULTIPLEXER	74151
SN74LS153	DUAL 4 - INPUT MULTIPLEXER	74153
SN74LS157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157
SN74LS174	HEX "D" F/F	74174
SN74LS175	QUAD "D" F/F	74175
SN74LS192	U/D DECADE CTR	74192
SN74LS193	U/D BINARY CTR	74193
SN74LS240	OCTAL INV BUS/LINE DRIVER	74240
SN74LS241	TRI-STATE OCTAL BUS/LINE DRIVER	74241
SN74LS244	TRI-STATE OCTAL DRIVER (NON-INVERTING)	74244
SN74LS251	TRI-STATE MULTIPLEXER	74151
SN74LS253	DUAL 4 - IN MUX (TS)	74153
SN74LS259	8 - BIT ADDRESSABLE LATCH	74259
SN74LS266	QUAD EX - NOR GATE	74266
SN74LS374	TRI-STATE OCTAL D FLIP FLOP	74374

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THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
J, JD, JDS, JS, N, ND, NDS, NS.

MC74HC00	QUAD 2 - INPUT NAND GATE	74C00
MC74HC02	QUAD 2 - INPUT NOR GATE	74C02
MC74HC08	QUAD 2 - INPUT AND GATE	74C08
MC74HC10	TRIPLE 3 - INPUT NAND GATE	74C10
MC74HC20	DUAL 4 - INPUT NAND GATE	74C20

IC#	FUNCTION	ICT-101 SIGNATURE
MC74HC27	TRIPLE 3 - INPUT NOR GATE	74C27
MC74HC42	BCD - TO - DECIMAL DECODER	74C42
MC74HC74	DUAL D FLIP FLOP	74C74
MC74HC107	DUAL J-K FLIP FLOP	74C107
MC74HC138	3 - TO - 8 LINE DECODER	74C138
MC74HC139	DUAL 2 - TO - 4 LINE DECODER	74C139
MC74HC151	8 - CHANNEL DIGITAL MULTIPLEXER	74C151
MC74HC153	DUAL 4 - INPUT MULTIPLEXER	74C153
MC74HC157	QUAD 2 - INPUT MULTIPLEXER	74C157
MC74HC160	SYNCHRONOUS DECADE COUNTER	74C160
MC74HC161	SYNCHRONOUS BINARY COUNTER	74C161
MC74HC162	FULLY SYNCHRONOUS DECADE COUNTER	74C160
MC74HC163	FULLY SYNCHRONOUS BINARY COUNTER	74C161
MC74HC173	TRI-STATE QUAD LATCH	74C173
MC74HC174	HEX D FLIP FLOP	74C174
MC74HC175	QUAD D FLIP FLOP	74C175
MC74HC240	TRI-STATE OCTAL BUFFERS	74C240
MC74HC241	OCTAL BUFFER	74C241
MC74HC244	TRI-STATE OCTAL BUFFERS	74C244
MC74HC251	8 - CHANNEL TRI-STATE MULTIPLEXER	74C151
MC74HC253	DUAL 4 - IN MUX (TS)	74C153
MC74HC257	QUAD 2 - IN MUX	74C157
MC74HC266	QUAD EX - NOR GATE	74C266
MC74HC374	TRI-STATE OCTAL D FLIP FLOP	74C374
MC74HCU04	HEX INVERTER	74C04

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THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: ABCBS, ADCBS, BAL, BALD, BALDS, BALS, BBCBS, BCL, BCLD, BCLDS, BCLS, BCP, BCPD, BCPDS, BCPS, BDCBS, UBAL, UBALD, UBALDS, UBALS, UBCL, UBCLD, UBCLDS, UBCLS, UBCP, UBCPD, UBCPDS, UBCPS.

MC14001	BUFFERED QUAD 2 - INPUT NOR GATE	4001
MC14002	BUFFERED DUAL 4 - INPUT NOR GATE	4002
MC14011	BUFFERED QUAD 2 - INPUT NAND GATE	4011
MC14012	BUFFERED DUAL 4 - INPUT NAND GATE	4012
MC14023	BUFFERED TRIPLE 3 - INPUT NAND GATE	4023
MC14025	BUFFERED TRIPLE 3 - INPUT NOR GATE	4025

IC#	FUNCTION	ICT-101 SIGNATURE
	THE FOLLOWING IC INCLUDES THESE SUFFIXES: ABCBS, ADCBS, UBAL, UBALD, UBALDS, UBALS, UBCL, UBCLD, UBCLDS, UBCLS, UBCP, UBCPD, UBCPDS, UBCPS.	
MC14069	HEX INVERTER	74C04
	THE FOLLOWING IC INCLUDES THESE SUFFIXES: ABCBS, ADCBS, BAL, BALD, BALDS, BALS, BBCBS, BCL, BCLD, BCLDS, BCLS, BCP, BCPD, BCPDS, BCPS, BDCBS.	
MC14081	BUFFERED QUAD 2 - INPUT AND GATE	4081
	THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: BAL, BALD, BALDS, BALS, BBEBS, BCL, BCLD, BCLDS, BCLS, BCP, BCPD, BCPDS, BCPS, BDEBS.	
MC14017	DECADE COUNTER/DIVIDER	4017
MC14020	14 - STAGE RIPPLE - CARRY BINARY COUNTER	4020
MC14022	DIVIDE BY 8 COUNTER/DIVIDER	4022
MC14028	BCD - TO - DECIMAL DECODER	4028
MC14040	12 - BIT BINARY RIPPLE COUNTER	4040
MC14052	DIFFERENTIAL 4 - CHANNEL MULTIPLEXER	4052
MC14174	HEX D FLIP FLOP	74C174
MC14175	QUAD D FLIP FLOP	74C175
MC14502	STROBED - HEX INV/BUFFER	4502
MC14503	TRI-STATE HEX BUFFER	74C367
MC14511	BCD - TO - 7 SEGMENT DECODER DRIVER	74C48
MC14543	BCD - TO - 7 SEGMENT DECODER (LCD)	74C48
	THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: BAL, BALD, BALDS, BALS, BBCBS, BCL, BCLD, BCLDS, BCLS, BCP, BCPD, BCPDS, BCPS, BDCBS.	
MC14013	DUAL D FLIP FLOP	4013
MC14024	7 BIT BINARY COUNTER	4024
MC14070	QUAD EXCLUSIVE OR GATE	4030
MC14071	BUFFERED QUAD 2 - INPUT OR GATE	4071
MC14072	BUFFERED DUAL 4 - INPUT OR GATE	4072
MC14073	TRIPLE 3 - INPUT AND GATE	4073
MC14075	TRIPLE 3 - INPUT OR GATE	4075
MC14082	BUFFERED DUAL 4 - INPUT AND GATE	4082
MC14093	QUAD 2 - INPUT NAND SCHMITT TRIGGER	4081

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
J, JD, JDS, JS, N, ND, NDS, NS.

IC#	FUNCTION	ICT-101 SIGNATURE
MC74HC4002	BUFFERED DUAL 4 - INPUT NOR GATE	4002
MC74HC4017	DECADE COUNTER/DIVIDER	4017
MC74HC4020	14 - STAGE RIPPLE - CARRY BINARY COUNTER	4020
MC74HC4024	7 BIT BINARY COUNTER	4024
MC74HC4040	12 - BIT BINARY RIPPLE COUNTER	4040
MC74HC4075	TRIPLE 3 - INPUT OR GATE	4075
MC74HC4511	BCD - TO - 7 SEGMENT DECODER DRIVER	74C48
MC75HC4543	BCD - TO - 7 SEGMENT DECODER (LCD)	74C48

STANDARD ICT-101 DICTIONARY

COMMERCIAL DIGITAL INTEGRATED CIRCUITS

TEXAS INSTRUMENTS

IC#	FUNCTION	ICT-101 SIGNATURE
SN7400	QUAD 2 - INPUT GATE	7400
SN7402	QUAD 2 - INPUT NOR GATE	7402
SN7403	QUAD 2 - INPUT GATE (OPEN COLLECTOR)	7400
SN7404	HEX INVERTER	7404
SN7405	HEX INVERTER (OPEN COLLECTOR)	7404
SN7406	30V - 40MA HEX INVERTER	7404
SN7408	QUAD 2 - INPUT POSITIVE AND GATE	7408
SN7409	QUAD 2 - INPUT AND GATE (OC)	7408
SN7410	TRIPLE 3 - INPUT NAND GATE	7410
SN7412	TRIPLE 3 - INPUT NAND GATE (OC)	7410
SN7413	DUAL SCHMITT TRIGGER	7420
SN7414	HEX SCHMITT TRIGGER	7404
SN7416	15V - 40MA HEX INVERTER	7404
SN7420	DUAL 4 - INPUT GATE	7420
SN7422	DUAL 4 - INPUT NAND GATE (OC)	7420
SN7426	QUAD 2 - INPUT NAND GATE (HV)	7400
SN7427	TRIPLE 3 - INPUT NOR GATE	7427
SN7428	QUAD 2 - INPUT NOR BUFFER	7402
SN7430	8 - INPUT GATE	7430
SN7432	QUAD 2 - INPUT OR GATE	7432
SN7433	QUAD 2 - INPUT NOR BUFFER (OC)	7402
SN7437	QUAD 2 - INPUT NAND BUFFER	7400
SN7438	QUAD 2 - INPUT NAND BUFFER (OC)	7400
SN7440	DUAL 4 - INPUT BUFFER	7420
SN7445	BCD - TO - DECIMAL DECODER/DRIVER	7442
SN7448	BCD - 7 SEG DECODER/DRIVER (ACTIVE HI)	7448
SN7474	DUAL D FLIP FLOP	7474
SN7486	QUAD EXCLUSIVE - OR GATE	7486
SN74107	DUAL J-K FLIP FLOP	74107
SN74128	QUAD 2 - INPUT NOR GATE	7402
SN74132	QUAD SCHMITT TRIGGER	7400
SN74136	QUAD EX - OR GATE	7486
SN74145	BCD - TO - DECIMAL DECODER/DRIVER	7442
SN74147	10 4 PRIORITY ENCODER	74147
SN74153	DUAL 4 - INPUT MULTIPLEXER	74153
SN74154	4/16 DECODER/DEMULTIPLEXER (FSC 9311)	74154
SN74157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157

IC#	FUNCTION	ICT-101 SIGNATURE
SN74160	PRESET DECADE CTR	74160
SN74161	PRESET BINARY CTR	74161
SN74162	PRESET DECADE CTR (SNY CLR)	74160
SN74163	PRESET DECADE CTR (SYN CLR)	74161
SN74173	QUAD "D" REG (TS)	74173
SN74174	HEX "D" F/F	74174
SN74175	QUAD "D" F/F	74175
SN74192	U/D DECADE CTR	74192
SN74193	U/D BINARY CTR	74193
SN74251	TRI-STATE MULTIPLEXER	74151
SN74259	8 - BIT ADDRESSABLE LATCH	74259

THE FOLLOWING IC'S INCLUDE THIS SUFFIX: A.

SN7442	BCD - TO - DECIMAL DECODER	7442
SN74151	8 LINE MULTIPLEXER	74151
SN74365	HEX BUFF (TS)	74365
SN74366	HEX INV (TS)	74366
SN74367	HEX BUFF (4-2) (TS)	74367
SN74368	HEX INV (4-2) (TS)	74368

SN74ALS00	QUAD 2 - INPUT GATE	7400
SN74ALS02	QUAD 2 - INPUT NOR GATE	7402
SN74ALS03	QUAD 2 - INPUT GATE (OPEN COLLECTOR)	7400
SN74ALS04	HEX INVERTER	7404
SN74ALS05	HEX INVERTER (OPEN COLLECTOR)	7404
SN74ALS08	QUAD 2 - INPUT POSITIVE AND GATE	7408
SN74ALS09	QUAD 2 - INPUT AND GATE (OC)	7408
SN74ALS10	TRIPLE 3 - INPUT NAND GATE	7410
SN74ALS11	TRIPLE 3 - INPUT AND GATE	7411
SN74ALS12	TRIPLE 3 - INPUT NAND GATE (OC)	7410
SN74ALS15	TRIPLE 3 - INPUT AND GATE (OC)	7411
SN74ALS20	DUAL 4 - INPUT GATE	7420
SN74ALS21	DUAL 4 - INPUT AND GATE	7421
SN74ALS22	DUAL 4 - INPUT NAND GATE (OC)	7420
SN74ALS27	TRIPLE 3 - INPUT NOR GATE	7427
SN74ALS28	QUAD 2 - INPUT NOR BUFFER	7402
SN74ALS30	8 - INPUT GATE	7430
SN74ALS32	QUAD 2 - INPUT OR GATE	7432
SN74ALS33	QUAD 2 - INPUT NOR BUFFER (OC)	7402
SN74ALS37	QUAD 2 - INPUT NAND BUFFER	7400
SN74ALS38	QUAD 2 - INPUT NAND BUFFER (OC)	7400
SN74ALS40	DUAL 4 - INPUT BUFFER	7420

IC#	FUNCTION	ICT-101 SIGNATURE
SN74H00	QUAD 2 - INPUT GATE	7400
SN74H04	HEX INVERTER	7404
SN74H05	HEX INVERTER (OPEN COLLECTOR)	7404
SN74H10	TRIPLE 3 - INPUT NAND GATE	7410
SN74H11	TRIPLE 3 - INPUT AND GATE	7411
SN74H15	TRIPLE 3 - INPUT AND GATE (OC)	7411
SN74H20	DUAL 4 - INPUT GATE	7420
SN74H21	DUAL 4 - INPUT AND GATE	7421
SN74H22	DUAL 4 - INPUT NAND GATE (OC)	7420
SN74H30	8 - INPUT GATE	7430
SN74H40	DUAL 4 - INPUT BUFFER	7420
SN74H74	DUAL D FLIP FLOP	7474
SN74L00	QUAD 2 - INPUT GATE	7400
SN74L02	QUAD 2 - INPUT NOR GATE	7402
SN74L03	QUAD 2 - INPUT GATE (OPEN COLLECTOR)	7400
SN74L04	HEX INVERTER	7404
SN74L20	DUAL 4 - INPUT GATE	7420
SN74L30	8 - INPUT GATE	7430
SN74L42	BCD - TO - DECIMAL DECODER	7442
SN74L74	DUAL D FLIP FLOP	7474
SN74L86	QUAD EXCLUSIVE - OR GATE	7486
SN74L153	DUAL 4 - INPUT MULTIPLEXER	74153
SN74L154	4/16 DECODER/DEMULTIPLEXER (FSC 9311)	74154
SN74L157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157
SN74L192	U/D DECADE CTR	74192
SN74L193	U/D BINARY CTR	74193
SN74LS00	QUAD 2 - INPUT GATE	7400
SN74LS02	QUAD 2 - INPUT NOR GATE	7402
SN74LS03	QUAD 2 - INPUT GATE (OPEN COLLECTOR)	7400
SN74LS04	HEX INVERTER	7404
SN74LS05	HEX INVERTER (OPEN COLLECTOR)	7404
SN74LS08	QUAD 2 - INPUT POSITIVE AND GATE	7408
SN74LS09	QUAD 2 - INPUT AND GATE (OC)	7408
SN74LS10	TRIPLE 3 - INPUT NAND GATE	7410
SN74LS11	TRIPLE 3 - INPUT AND GATE	7411
SN74LS12	TRIPLE 3 - INPUT NAND GATE (OC)	7410
SN74LS13	DUAL SCHMITT TRIGGER	7420
SN74LS14	HEX SCHMITT TRIGGER	7404
SN74LS15	TRIPLE 3 - INPUT AND GATE (OC)	7411
SN74LS20	DUAL 4 - INPUT GATE	7420
SN74LS21	DUAL 4 - INPUT AND GATE	7421
SN74LS22	DUAL 4 - INPUT NAND GATE (OC)	7420
SN74LS26	QUAD 2 - INPUT NAND GATE (HV)	7400

IC#	FUNCTION	ICT-101 SIGNATURE
SN74LS27	TRIPLE 3 - INPUT NOR GATE	7427
SN74LS28	QUAD 2 - INPUT NOR BUFFER	7402
SN74LS30	8 - INPUT GATE	7430
SN74LS32	QUAD 2 - INPUT OR GATE	7432
SN74LS33	QUAD 2 - INPUT NOR BUFFER (OC)	7402
SN74LS37	QUAD 2 - INPUT NAND BUFFER	7400
SN74LS38	QUAD 2 - INPUT NAND BUFFER (OC)	7400
SN74LS40	DUAL 4 - INPUT BUFFER	7420
SN74LS42	BCD - TO - DECIMAL DECODER	7442
SN74LS48	BCD - 7 SEG DECODER/DRIVER (ACTIVE HI)	7448
SN74LS86	QUAD EXCLUSIVE - OR GATE	7486
SN74LS132	QUAD SCHMITT TRIGGER	7400
SN74LS136	QUAD EX - OR GATE	7486
SN74LS138	EXP SNGL 3/8 DECODER	74138
SN74LS139	EXP DUAL 2/4 DECODER	74139
SN74LS145	BCD - TO - DECIMAL DECODER/DRIVER	7442
SN74LS147	10/4 PRIORITY ENCODER	74147
SN74LS151	8 LINE MULTIPLEXER	74151
SN74LS153	DUAL 4 - INPUT MULTIPLEXER	74153
SN74LS157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157
SN74LS174	HEX "D" F/F	74174
SN74LS175	QUAD "D" F/F	74175
SN74LS192	U/D DECADE CTR	74192
SN74LS193	U/D BINARY CTR	74193
SN74LS240	OCTAL INV BUS/LINE DRIVER	74240
SN74LS241	TRI-STATE OCTAL BUS/LINE DRIVER	74241
SN74LS244	TRI-STATE OCTAL DRIVER (NON-INVERTING)	74244
SN74LS251	TRI-STATE MULTIPLEXER	74151
SN74LS253	DUAL 4 - IN MUX (TS)	74153
SN74LS259	8 - BIT ADDRESSABLE LATCH	74259
SN74LS266	QUAD EX - NOR GATE	74266
SN74LS374	TRI-STATE OCTAL D FLIP FLOP	74374

THE FOLLOWING IC'S INCLUDE THIS SUFFIX: A.

SN74LS74	DUAL D FLIP FLOP	7474
SN74LS107	DUAL J-K FLIP FLOP	74107
SN74LS160	PRESET DECADE CTR	74160
SN74LS161	PRESET BINARY CTR	74161
SN74LS162	PRESET DECADE CTR (SNY CLR)	74160
SN74LS163	PRESET DECADE CTR (SYN CLR)	74161
SN74LS173	QUAD "D" REG (TS)	74173
SN74LS257	QUAD 2 - IN MUX	74157
SN74LS365	HEX BUFF (TS)	74365
SN74LS366	HEX INV (TS)	74366
SN74LS367	HEX BUFF (4-2) (TS)	74367

IC#	FUNCTION	ICT-101 SIGNATURE
SN74LS368	HEX INV (4-2) (TS)	74368
SN74S00	QUAD 2 - INPUT GATE	7400
SN74S02	QUAD 2 - INPUT NOR GATE	7402
SN74S03	QUAD 2 - INPUT GATE (OPEN COLLECTOR)	7400
SN74S04	HEX INVERTER	7404
SN74S05	HEX INVERTER (OPEN COLLECTOR)	7404
SN74S08	QUAD 2 - INPUT POSITIVE AND GATE	7408
SN74S09	QUAD 2 - INPUT AND GATE (OC)	7408
SN74S10	TRIPLE 3 - INPUT NAND GATE	7410
SN74S11	TRIPLE 3 - INPUT AND GATE	7411
SN74S15	TRIPLE 3 - INPUT AND GATE (OC)	7411
SN74S20	DUAL 4 - INPUT GATE	7420
SN74S22	DUAL 4 - INPUT NAND GATE (OC)	7420
SN74S30	8 - INPUT GATE	7430
SN74S32	QUAD 2 - INPUT OR GATE	7432
SN74S37	QUAD 2 - INPUT NAND BUFFER	7400
SN74S38	QUAD 2 - INPUT NAND BUFFER (OC)	7400
SN74S40	DUAL 4 - INPUT BUFFER	7420
SN74S74	DUAL D FLIP FLOP	7474
SN74S86	QUAD EXCLUSIVE - OR GATE	7486
SN74S132	QUAD SCHMITT TRIGGER	7400
SN74S138	EXP SNGL 3/8 DECODER	74138
SN74S139	EXP DUAL 2/4 DECODER	74139
SN74S140	DUAL 4 - INPUT NAND DRIVER	7420
SN74S151	8 LINE MULTIPLEXER	74151
SN74S153	DUAL 4 - INPUT MULTIPLEXER	74153
SN74S157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157
SN74S162	PRESET DECADE CTR (SNY CLR)	74160
SN74S163	PRESET DECADE CTR (SYN CLR)	74161
SN74S174	HEX "D" F/F	74174
SN74S175	QUAD "D" F/F	74175
SN74S240	OCTAL INV BUS/LINE DRIVER	74240
SN74S241	TRI-STATE OCTAL BUS/LINE DRIVER	74241
SN74S251	TRI-STATE MULTIPLEXER	74151
SN74S257	QUAD 2 - IN MUX	74157
SN74S374	TRI-STATE OCTAL D FLIP FLOP	74374

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74HC00	QUAD 2 - INPUT NAND GATE	74C00
74HC02	QUAD 2 - INPUT NOR GATE	74C02
74HC04	HEX INVERTER	74C04
74HC08	QUAD 2 - INPUT AND GATE	74C08
74HC10	TRIPLE 3 - INPUT NAND GATE	74C10
74HC11	3 - INPUT AND GATE	74C11

IC#	FUNCTION	ICT-101 SIGNATURE
74HC20	DUAL 4 - INPUT NAND GATE	74C20
74HC21	DUAL 4 - INPUT AND GATE	74C21
74HC27	TRIPLE 3 - INPUT NOR GATE	74C27
74HC30	8 - INPUT AND GATE	74C30
74HC32	QUAD 2 - INPUT OR GATE	74C32
74HC42	BCD - TO - DECIMAL DECODER	74C42
74HC73	DUAL J-K FLIP FLOP	74C48
74HC74	DUAL D FLIP FLOP	74C74
74HC107	DUAL J-K FLIP FLOP	74C107
74HC138	3 - TO - 8 LINE DECODER	74C138
74HC139	DUAL 2 - TO - 4 LINE DECODER	74C139
74HC147	10 TO 4 LINE ENCODER	74C147
74HC151	8 - CHANNEL DIGITAL MULTIPLEXER	74C151
74HC153	DUAL 4 - INPUT MULTIPLEXER	74C153
74HC154	4 LINE TO 16 LINE DECODER	74C154
74HC157	QUAD 2 - INPUT MULTIPLEXER	74C157
74HC160	SYNCHRONOUS DECADE COUNTER	74C160
74HC161	SYNCHRONOUS BINARY COUNTER	74C161
74HC162	FULLY SYNCHRONOUS DECADE COUNTER	74C160
74HC163	FULLY SYNCHRONOUS BINARY COUNTER	74C161
74HC173	TRI-STATE QUAD LATCH	74C173
74HC174	HEX D FLIP FLOP	74C174
74HC175	QUAD D FLIP FLOP	74C175
74HC192	DECADE UP/DOWN COUNTER	74C192
74HC193	BINARY UP/DOWN COUNTER	74C193
74HC240	TRI-STATE OCTAL BUFFERS	74C240
74HC241	OCTAL BUFFER	74C241
74HC244	TRI-STATE OCTAL BUFFERS	74C244
74HC251	8 - CHANNEL TRI-STATE MULTIPLEXER	74C151
74HC253	DUAL 4 - IN MUX (TS)	74C153
74HC257	QUAD 2 - IN MUX	74C157
74HC259	8 - BIT ADDRESSABLE LATCH	74C259
74HC266	QUAD EX - NOR GATE	74C266
74HC365	HEX BUFF (TS)	74C365
74HC366	HEX INV (TS)	74C366
74HC367	HEX BUFF (4-2) (TS)	74C367
74HC368	HEX INV (4-2) (TS)	74C368
74HC374	TRI-STATE OCTAL D FLIP FLOP	74C374

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MC14002	BUFFERED DUAL 4 - INPUT NOR GATE	4002
MC14017	DECADE COUNTER/DIVIDER	4017
MC14020	14 - STAGE RIPPLE - CARRY BINARY COUNTER	4020
MC14040	12 - BIT BINARY RIPPLE COUNTER	4040
MC14075	TRIPLE 3 - INPUT OR GATE	4075
MC14511	BCD - TO - 7 SEGMENT DECODER DRIVER	74C48

STANDARD ICT-101 DICTIONARY

COMMERCIAL DIGITAL INTEGRATED CIRCUITS

FAIRCHILD

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: DC, PC.

IC#	FUNCTION	ICT-101 SIGNATURE
7400	QUAD 2 - INPUT GATE	7400
7402	QUAD 2 - INPUT NOR GATE	7402
7403	QUAD 2 - INPUT GATE (OPEN COLLECTOR)	7400
7404	HEX INVERTER	7404
7405	HEX INVERTER (OPEN COLLECTOR)	7404
7406	30V - 40MA HEX INVERTER	7404
7408	QUAD 2 - INPUT POSITIVE AND GATE	7408
7409	QUAD 2 - INPUT AND GATE (OC)	7408
7410	TRIPLE 3 - INPUT NAND GATE	7410
7411	TRIPLE 3 - INPUT AND GATE	7411
7412	TRIPLE 3 - INPUT NAND GATE (OC)	7410
7413	DUAL SCHMITT TRIGGER	7420
7414	HEX SCHMITT TRIGGER	7404
7416	15V - 40MA HEX INVERTER	7404
7420	DUAL 4 - INPUT GATE	7420
7421	DUAL 4 - INPUT AND GATE	7421
7426	QUAD 2 - INPUT NAND GATE (HV)	7400
7427	TRIPLE 3 - INPUT NOR GATE	7427
7430	8 - INPUT GATE	7430
7432	QUAD 2 - INPUT OR GATE	7432
7437	QUAD 2 - INPUT NAND BUFFER	7400
7438	QUAD 2 - INPUT NAND BUFFER (OC)	7400
7440	DUAL 4 - INPUT BUFFER	7420
7442	BCD - TO - DECIMAL DECODER	7442
7445	BCD - TO - DECIMAL DECODER/DRIVER	7442
7474	DUAL D FLIP FLOP	7474
7486	QUAD EXCLUSIVE - OR GATE	7486
74107	DUAL J-K FLIP FLOP	74107
74132	QUAD SCHMITT TRIGGER	7400
74145	BCD - TO - DECIMAL DECODER/DRIVER	7442
74151	8 LINE MULTIPLEXER	74151
74153	DUAL 4 - INPUT MULTIPLEXER	74153
74157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157
74161	PRESET BINARY CTR	74161
74163	PRESET DECADE CTR (SYN CLR)	74161

IC#	FUNCTION	ICT-101 SIGNATURE
74173	QUAD "D" REG (TS)	74173
74174	HEX "D" F/F	74174
74175	QUAD "D" F/F	74175
74192	U/D DECADE CTR	74192
74193	U/D BINARY CTR	74193

THE FOLLOWING IC'S INCLUDE THIS SUFFIX: PC.

7448	BCD - 7 SEG DECODER/DRIVER (ACTIVE HI)	7448
74154	4/16 DECODER/DEMULTIPLEXER (FSC 9311)	75154

74F04DC	HEX INVERTER	7404

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: DC, PC.

74F00	QUAD 2 - INPUT GATE	7400
74F02	QUAD 2 - INPUT NOR GATE	7402
74F08	QUAD 2 - INPUT POSITIVE AND GATE	7408
74F10	TRIPLE 3 - INPUT NAND GATE	7410
74F11	TRIPLE 3 - INPUT AND GATE	7411
74F20	DUAL 4 - INPUT GATE	7420
74F32	QUAD 2 - INPUT OR GATE	7432
74F74	DUAL D FLIP FLOP	7474
74F86	QUAD EXCLUSIVE - OR GATE	7486
74F138	EXP SNGL 3/8 DECODER	74138
74F139	EXP DUAL 2/4 DECODER	74139
74F151	8 LINE MULTIPLEXER	74151
74F153	DUAL 4 - INPUT MULTIPLEXER	74153
74F157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157
74F175	QUAD "D" F/F	74175
74F240	OCTAL INV BUS/LINE DRIVER	74240
74F241	TRI-STATE OCTAL BUS/LINE DRIVER	74241
74F244	TRI-STATE OCTAL DRIVER (NON-INVERTING)	74244
74F251	TRI-STATE MULTIPLEXER	74151
74F253	DUAL 4 - IN MUX (TS)	74153
74F257	QUAD 2 - IN MUX	74157
74F374	TRI-STATE OCTAL D FLIP FLOP	74374

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: DC, PC.

74H00	QUAD 2 - INPUT GATE	7400
74H04	HEX INVERTER	7404
74H05	HEX INVERTER (OPEN COLLECTOR)	7404

IC#	FUNCTION	ICT-101 SIGNATURE
74H08	QUAD 2 - INPUT POSITIVE AND GATE	7408
74H10	TRIPLE 3 - INPUT NAND GATE	7410
74H11	TRIPLE 3 - INPUT AND GATE	7411
74H20	DUAL 4 - INPUT GATE	7420
74H21	DUAL 4 - INPUT AND GATE	7421
74H30	8 - INPUT GATE	7430
74H40	DUAL 4 - INPUT BUFFER	7420
74H74	DUAL D FLIP FLOP	7474

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: ADC, APC.

74LS257	QUAD 2 - IN MUX	74157
74LS365	HEX BUFF (TS)	74365
74LS366	HEX INV (TS)	74366
74LS368	HEX INV (4-2) (TS)	74368

74LS367DC	HEX BUFF (4-2) (TS)	74367
74LS367APC	HEX BUFF (4-2) (TS)	74367

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: DC, PC.

74LS00	QUAD 2 - INPUT GATE	7400
74LS02	QUAD 2 - INPUT NOR GATE	7402
74LS03	QUAD 2 - INPUT GATE (OPEN COLLECTOR)	7400
74LS04	HEX INVERTER	7404
74LS05	HEX INVERTER (OPEN COLLECTOR)	7404
74LS08	QUAD 2 - INPUT POSITIVE AND GATE	7408
74LS10	TRIPLE 3 - INPUT NAND GATE	7410
74LS11	TRIPLE 3 - INPUT AND GATE	7411
74LS14	HEX SCHMITT TRIGGER	7404
74LS20	DUAL 4 - INPUT GATE	7420
74LS21	DUAL 4 - INPUT AND GATE	7421
74LS26	QUAD 2 - INPUT NAND GATE (HV)	7400
74LS27	TRIPLE 3 - INPUT NOR GATE	7427
74LS30	8 - INPUT GATE	7430
74LS32	QUAD 2 - INPUT OR GATE	7432
74LS37	QUAD 2 - INPUT NAND BUFFER	7400
74LS38	QUAD 2 - INPUT NAND BUFFER (OC)	7400
74LS42	BCD - TO - DECIMAL DECODER	7442
74LS74	DUAL D FLIP FLOP	7474
74LS86	QUAD EXCLUSIVE - OR GATE	7486
74LS132	QUAD SCHMITT TRIGGER	7400
74LS136	QUAD EX - OR GATE	7486
74LS138	EXP SNGL 3/8 DECODER	74138

IC#	FUNCTION	ICT-101 SIGNATURE
74LS139	EXP DUAL 2/4 DECODER	74139
74LS151	8 LINE MULTIPLEXER	74151
74LS153	DUAL 4 - INPUT MULTIPLEXER	74153
74LS157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157
74LS161	PRESET BINARY CTR	74161
74LS163	PRESET DECADE CTR (SYN CLR)	74161
74LS173	QUAD "D" REG (TS)	74173
74LS174	HEX "D" F/F	74174
74LS175	QUAD "D" F/F	74175
74LS192	U/D DECADE CTR	74192
74LS193	U/D BINARY CTR	74193
74LS251	TRI-STATE MULTIPLEXER	74151
74LS253	DUAL 4 - IN MUX (TS)	74153
74LS259	8 - BIT ADDRESSABLE LATCH	74259
74LS266	QUAD EX - NOR GATE	74266

THE FOLLOWING IC'S INCLUDE THIS SUFFIX: PC.

74LS09	QUAD 2 - INPUT AND GATE (OC)	7408
74LS13	DUAL SCHMITT TRIGGER	7420
74LS15	TRIPLE 3 - INPUT AND GATE (OC)	7411
74LS28	QUAD 2 - INPUT NOR BUFFER	7402
74LS33	QUAD 2 - INPUT NOR BUFFER (OC)	7402
74LS40	DUAL 4 - INPUT BUFFER	7420
74LS160	PRESET DECADE CTR	74160
74LS162	PRESET DECADE CTR (SNY CLR)	74160
74LS240	OCTAL INV BUS/LINE DRIVER	74240
74LS241	TRI-STATE OCTAL BUS/LINE DRIVER	74241

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: DC, PC.

74S00	QUAD 2 - INPUT GATE	7400
74S02	QUAD 2 - INPUT NOR GATE	7402
74S03	QUAD 2 - INPUT GATE (OPEN COLLECTOR)	7400
74S04	HEX INVERTER	7404
74S05	HEX INVERTER (OPEN COLLECTOR)	7404
74S08	QUAD 2 - INPUT POSITIVE AND GATE	7408
74S10	TRIPLE 3 - INPUT NAND GATE	7410
74S11	TRIPLE 3 - INPUT AND GATE	7411
74S20	DUAL 4 - INPUT GATE	7420
74S30	8 - INPUT GATE	7430
74S40	DUAL 4 - INPUT BUFFER	7420
74S74	DUAL D FLIP FLOP	7474
74S86	QUAD EXCLUSIVE - OR GATE	7486
74S132	QUAD SCHMITT TRIGGER	7400

IC#	FUNCTION	ICT-101 SIGNATURE
74S138	EXP SNGL 3/8 DECODER	74138
74S139	EXP DUAL 2/4 DECODER	74139
74S140	DUAL 4 - INPUT NAND DRIVER	7420
74S151	8 LINE MULTIPLEXER	74151
74S153	DUAL 4 - INPUT MULTIPLEXER	74153
74S157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157
74S174	HEX "D" F/F	74174
74S175	QUAD "D" F/F	74175
74S253	DUAL 4 - IN MUX (TS)	74153
74S257	QUAD 2 - IN MUX	74157

74S15PC	TRIPLE 3 - INPUT AND GATE (OC)	7411

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THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
BDC, BDM, BFM, BPC.

4001	BUFFERED QUAD 2 - INPUT NOR GATE	4001
4002	BUFFERED DUAL 4 - INPUT NOR GATE	4002
4011	BUFFERED QUAD 2 - INPUT NAND GATE	4011
4012	BUFFERED DUAL 4 - INPUT NAND GATE	4012
4013	DUAL D FLIP FLOP	4013
4017	DECADE COUNTER/DIVIDER	4017
4020	14 - STAGE RIPPLE - CARRY BINARY COUNTER	4020
4023	BUFFERED TRIPLE 3 - INPUT NAND GATE	4023
4024	7 BIT BINARY COUNTER	4024
4025	BUFFERED TRIPLE 3 - INPUT NOR GATE	4025
4028	BCD - TO - DECIMAL DECODER	4028
4030	QUAD EX - OR GATE	4030
4040	12 - BIT BINARY RIPPLE COUNTER	4040
4052	DIFFERENTIAL 4 - CHANNEL MULTIPLEXER	4052
4069	HEX INVERTER	74C04
4070	QUAD EXCLUSIVE OR GATE	4030
4071	BUFFERED QUAD 2 - INPUT OR GATE	4071
4081	BUFFERED QUAD 2 - INPUT AND GATE	4081
4511	BCD - TO - 7 SEGMENT DECODER DRIVER	74C48
40174	HEX D FLIP FLOP	74C174
40175	QUAD D FLIP FLOP	74C175
40193	BINARY UP/DOWN COUNTER	74C193

4069UBDC	HEX INVERTER	74C04
4069UBDM	HEX INVERTER	74C04
4069UBFM	HEX INVERTER	74C04
4069UBPC	HEX INVERTER	74C04

STANDARD ICT-101 DICTIONARY

COMMERCIAL DIGITAL INTEGRATED CIRCUITS

RCA

THE FOLLOWING IC'S INCLUDE THIS SUFFIX: E.

IC#	FUNCTION	ICT-101 SIGNATURE
CD74HCT00	QUAD 2 - INPUT GATE	7400
CD74HCT02	QUAD 2 - INPUT NOR GATE	7402
CD74HCT04	HEX INVERTER	7404
CD74HCT08	QUAD 2 - INPUT POSITIVE AND GATE	7408
CD74HCT10	TRIPLE 3 - INPUT NAND GATE	7410
CD74HCT11	TRIPLE 3 - INPUT AND GATE	7411
CD74HCT14	HEX SCHMITT TRIGGER	7404
CD74HCT20	DUAL 4 - INPUT GATE	7420
CD74HCT27	TRIPLE 3 - INPUT NOR GATE	7427
CD74HCT30	8 - INPUT GATE	7430
CD74HCT32	QUAD 2 - INPUT OR GATE	7432
CD74HCT42	BCD - TO - DECIMAL DECODER	7442
CD74HCT74	DUAL D FLIP FLOP	7474
CD74HCT86	QUAD EXCLUSIVE - OR GATE	7486
CD74HCT107	DUAL J-K FLIP FLOP	74107
CD74HCT132	QUAD SCHMITT TRIGGER	7400
CD74HCT138	EXP SNGL 3/8 DECODER	74138
CD74HCT139	EXP DUAL 2/4 DECODER	74139
CD74HCT147	10/4 PRIORITY ENCODER	74147
CD74HCT151	8 LINE MULTIPLEXER	74151
CD74HCT153	DUAL 4 - INPUT MULTIPLEXER	74153
CD74HCT154	4/16 DECODER/DEMULTIPLEXER (FSC 9311)	75154
CD74HCT157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157
CD74HCT158	QUAD 2 - INPUT MULTIPLEXER (9322)	74158
CD74HCT160	PRESET DECADE CTR	74160
CD74HCT161	PRESET BINARY CTR	74161
CD74HCT162	PRESET DECADE CTR (SNY CLR)	74160
CD74HCT163	PRESET DECADE CTR (SYN CLR)	74161
CD74HCT173	QUAD "D" REG (TS)	74173
CD74HCT174	HEX "D" F/F	74174
CD74HCT175	QUAD "D" F/F	74175
CD74HCT192	U/D DECADE CTR	74192
CD74HCT193	U/D BINARY CTR	74193
CD74HCT240	OCTAL INV BUS/LINE DRIVER	74240
CD74HCT241	TRI-STATE OCTAL BUS/LINE DRIVER	74241

IC#	FUNCTION	ICT-101 SIGNATURE
CD74HCT244	TRI-STATE OCTAL DRIVER (NON-INVERTING)	74244
CD74HCT251	TRI-STATE MULTIPLEXER	74151
CD74HCT253	DUAL 4 - IN MUX (TS)	74153
CD74HCT257	QUAD 2 - IN MUX	74157
CD74HCT259	8 - BIT ADDRESSABLE LATCH	74259
CD74HCT266	QUAD EX - NOR GATE	74266
CD74HCT365	HEX BUFF (TS)	74365
CD74HCT366	HEX INV (TS)	74366
CD74HCT367	HEX BUFF (4-2) (TS)	74367
CD74HCT368	HEX INV (4-2) (TS)	74368
CD74HCT374	TRI-STATE OCTAL D FLIP FLOP	74374

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THE FOLLOWING IC'S INCLUDE THIS SUFFIX: E.

IC#	FUNCTION	ICT-101 SIGNATURE
CD74HC00	QUAD 2 - INPUT NAND GATE	74C00
CD74HC02	QUAD 2 - INPUT NOR GATE	74C02
CD74HC04	HEX INVERTER	74C04
CD74HC08	QUAD 2 - INPUT AND GATE	74C08
CD74HC10	TRIPLE 3 - INPUT NAND GATE	74C10
CD74HC11	3 - INPUT AND GATE	74C11
CD74HC20	DUAL 4 - INPUT NAND GATE	74C20
CD74HC27	TRIPLE 3 - INPUT NOR GATE	74C27
CD74HC30	8 - INPUT AND GATE	74C30
CD74HC32	QUAD 2 - INPUT OR GATE	74C32
CD74HC42	BCD - TO - DECIMAL DECODER	74C42
CD74HC73	DUAL J-K FLIP FLOP	74C48
CD74HC74	DUAL D FLIP FLOP	74C74
CD74HC107	DUAL J-K FLIP FLOP	74C107
CD74HC138	3 - TO - 8 LINE DECODER	74C138
CD74HC139	DUAL 2 - TO - 4 LINE DECODER	74C139
CD74HC147	10 TO 4 LINE ENCODER	74C147
CD74HC151	8 - CHANNEL DIGITAL MULTIPLEXER	74C151
CD74HC153	DUAL 4 - INPUT MULTIPLEXER	74C153
CD74HC154	4 LINE TO 16 LINE DECODER	74C154
CD74HC157	QUAD 2 - INPUT MULTIPLEXER	74C157
CD74HC160	SYNCHRONOUS DECADE COUNTER	74C160
CD74HC161	SYNCHRONOUS BINARY COUNTER	74C161
CD74HC162	FULLY SYNCHRONOUS DECADE COUNTER	74C160
CD74HC163	FULLY SYNCHRONOUS BINARY COUNTER	74C161
CD74HC173	TRI-STATE QUAD LATCH	74C173
CD74HC174	HEX D FLIP FLOP	74C174
CD74HC175	QUAD D FLIP FLOP	74C175
CD74HC192	DECADE UP/DOWN COUNTER	74C192
CD74HC193	BINARY UP/DOWN COUNTER	74C193
CD74HC240	TRI-STATE OCTAL BUFFERS	74C240

IC#	FUNCTION	ICT-101 SIGNATURE
CD74HC241	OCTAL BUFFER	74C241
CD74HC244	TRI-STATE OCTAL BUFFER	74C244
CD74HC251	8 - CHANNEL TRI-STATE MULTIPLEXER	74C151
CD74HC253	DUAL 4 - IN MUX (TS)	74C153
CD74HC257	QUAD 2 - IN MUX	74C157
CD74HC259	8 - BIT ADDRESSABLE LATCH	74C259
CD74HC266	QUAD EX - NOR GATE	74C266
CD74HC365	HEX BUFF (TS)	74C365
CD74HC366	HEX INV (TS)	74C366
CD74HC367	HEX BUFF (4-2) (TS)	74C367
CD74HC368	HEX INV (4-2) (TS)	74C368
CD74HC374	TRI-STATE OCTAL D FLIP FLOP	74C374

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THE FOLLOWING IC'S INCLUDE THIS SUFFIX: E.

CD74HC4002	BUFFERED DUAL 4 - INPUT NOR GATE	4002
CD74HC4017	DECADE COUNTER/DIVIDER	4017
CD74HC4020	14 - STAGE RIPPLE - CARRY BINARY COUNTER	4020
CD74HC4024	7 BIT BINARY COUNTER	4024
CD74HC4040	12 - BIT BINARY RIPPLE COUNTER	4040
CD74HC4052	DIFFERENTIAL 4 - CHANNEL MULTIPLEXER	4052
CD74HC4511	BCD - TO - 7 SEGMENT DECODER DRIVER	74C48
CD74HCT4002	BUFFERED DUAL 4 - INPUT NOR GATE	4002
CD74HCT4017	DECADE COUNTER/DIVIDER	4017
CD74HCT4020	14 - STAGE RIPPLE - CARRY BINARY COUNTER	4020
CD74HCT4024	7 BIT BINARY COUNTER	4024
CD74HCT4040	12 - BIT BINARY RIPPLE COUNTER	4040
CD74HCT4052	DIFFERENTIAL 4 - CHANNEL MULTIPLEXER	4052
CD74HCT4511	BCD - TO - 7 SEGMENT DECODER DRIVER	74C48

STANDARD ICT-101 DICTIONARY

COMMERCIAL DIGITAL INTEGRATED CIRCUITS

SIGNETICS

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
AN, AF.

IC#	FUNCTION	ICT-101 SIGNATURE
74365	HEX BUFF (TS)	74365
74366	HEX INV (TS)	74366
74367	HEX BUFF (4-2) (TS)	74367
74368	HEX INV (4-2) (TS)	74368

THE FOLLOWING IC INCLUDES THESE SUFFIXES: D, F, N.

7406	30V - 40MA HEX INVERTER	7404

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: F, N.

N7400	QUAD 2 - INPUT GATE	7400
N7402	QUAD 2 - INPUT NOR GATE	7402
N7403	QUAD 2 - INPUT GATE (OPEN COLLECTOR)	7400
N7404	HEX INVERTER	7404
N7405	HEX INVERTER (OPEN COLLECTOR)	7404
N7408	QUAD 2 - INPUT POSITIVE AND GATE	7408
N7410	TRIPLE 3 - INPUT NAND GATE	7410
N7411	TRIPLE 3 - INPUT AND GATE	7411
N7413	DUAL SCHMITT TRIGGER	7420
N7414	HEX SCHMITT TRIGGER	7404
N7416	15V - 40MA HEX INVERTER	7404
N7420	DUAL 4 - INPUT GATE	7420
N7421	DUAL 4 - INPUT AND GATE	7421
N7426	QUAD 2 - INPUT NAND GATE (HV)	7400
N7427	TRIPLE 3 - INPUT NOR GATE	7427
N7428	QUAD 2 - INPUT NOR BUFFER	7402
N7430	8 - INPUT GATE	7430
N7432	QUAD 2 - INPUT OR GATE	7432
N7433	QUAD 2 - INPUT NOR BUFFER (OC)	7402
N7437	QUAD 2 - INPUT NAND BUFFER	7400
N7438	QUAD 2 - INPUT NAND BUFFER (OC)	7400

IC#	FUNCTION	ICT-101 SIGNATURE
N7440	DUAL 4 - INPUT BUFFER	7420
N7442	BCD - TO - DECIMAL DECODER	7442
N7445	BCD - TO - DECIMAL DECODER/DRIVER	7442
N7474	DUAL D FLIP FLOP	7474
N7486	QUAD EXCLUSIVE - OR GATE	7486
N74107	DUAL J-K FLIP FLOP	74107
N74128	QUAD 2 - INPUT NOR GATE	7402
N74132	QUAD SCHMITT TRIGGER	7400
N74145	BCD - TO - DECIMAL DECODER/DRIVER	7442
N74147	10/4 PRIORITY ENCODER	74147
N74151	8 LINE MULTIPLEXER	74151
N74153	DUAL 4 - INPUT MULTIPLEXER	74153
N74154	4/16 DECODER/DEMULTIPLEXER (FSC 9311)	75154
N74157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157
N74160	PRESET DECADE CTR	74160
N74161	PRESET BINARY CTR	74161
N74163	PRESET DECADE CTR (SYN CLR)	74161
N74173	QUAD "D" REG (TS)	74173
N74174	HEX "D" F/F	74174
N74175	QUAD "D" F/F	74175
N74192	U/D DECADE CTR	74192
N74193	U/D BINARY CTR	74193

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: F, N.

N74F00	QUAD 2 - INPUT GATE	7400
N74F04	HEX INVERTER	7404
N74F10	TRIPLE 3 - INPUT NAND GATE	7410
N74F11	TRIPLE 3 - INPUT AND GATE	7411
N74F20	DUAL 4 - INPUT GATE	7420
N74F74	DUAL D FLIP FLOP	7474
N74F86	QUAD EXCLUSIVE - OR GATE	7486
N74F138	EXP SNGL 3/8 DECODER	74138
N74F139	EXP DUAL 2/4 DECODER	74139
N74F157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157
N74F257	QUAD 2 - IN MUX	74157
N74F374	TRI-STATE OCTAL D FLIP FLOP	74374

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
AD, AF, AN.

N74LS74	DUAL D FLIP FLOP	7474
N74LS161	PRESET BINARY CTR	74161
N74LS163	PRESET DECADE CTR (SYN CLR)	74161
N74LS365	HEX BUFF (TS)	74365

IC#	FUNCTION	ICT-101 SIGNATURE
N74LS367	HEX BUFF (4-2) (TS)	74367
N74LS368	HEX INV (4-2) (TS)	74368

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
AF, AN.

N74LS160	PRESET DECADE CTR	74160
N74LS162	PRESET DECADE CTR (SNY CLR)	74160
N74LS257	QUAD 2 - IN MUX	74157
N74LS366	HEX INV (TS)	74366

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: D, F, N.

N74LS00	QUAD 2 - INPUT GATE	7400
N74LS02	QUAD 2 - INPUT NOR GATE	7402
N74LS04	HEX INVERTER	7404
N74LS05	HEX INVERTER (OPEN COLLECTOR)	7404
N74LS08	QUAD 2 - INPUT POSITIVE AND GATE	7408
N74LS10	TRIPLE 3 - INPUT NAND GATE	7410
N74LS11	TRIPLE 3 - INPUT AND GATE	7411
N74LS14	HEX SCHMITT TRIGGER	7404
N74LS20	DUAL 4 - INPUT GATE	7420
N74LS27	TRIPLE 3 - INPUT NOR GATE	7427
N74LS30	8 - INPUT GATE	7430
N74LS32	QUAD 2 - INPUT OR GATE	7432
N74LS38	QUAD 2 - INPUT NAND BUFFER (OC)	7400
N74LS86	QUAD EXCLUSIVE - OR GATE	7486
N74LS107	DUAL J-K FLIP FLOP	74107
N74LS138	EXP SNGL 3/8 DECODER	74138
N74LS139	EXP DUAL 2/4 DECODER	74139
N74LS151	8 LINE MULTIPLEXER	74151
N74LS153	DUAL 4 - INPUT MULTIPLEXER	74153
N74LS157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157
N74LS174	HEX "D" F/F	74174
N74LS175	QUAD "D" F/F	74175
N74LS193	U/D BINARY CTR	74193
N74LS240	OCTAL INV BUS/LINE DRIVER	74240
N74LS241	TRI-STATE OCTAL BUS/LINE DRIVER	74241
N74LS244	TRI-STATE OCTAL DRIVER (NON-INVERTING)	74244
N74LS253	DUAL 4 - IN MUX (TS)	74153
N74LS259	8 - BIT ADDRESSABLE LATCH	74259

IC#	FUNCTION	ICT-101 SIGNATURE
THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: F, N.		
N74LS09	QUAD 2 - INPUT AND GATE (OC)	7408
N74LS13	DUAL SCHMITT TRIGGER	7420
N74LS21	DUAL 4 - INPUT AND GATE	7421
N74LS26	QUAD 2 - INPUT NAND GATE (HV)	7400
N74LS33	QUAD 2 - INPUT NOR BUFFER (OC)	7402
N74LS37	QUAD 2 - INPUT NAND BUFFER	7400
N74LS40	DUAL 4 - INPUT BUFFER	7420
N74LS42	BCD - TO - DECIMAL DECODER	7442
N74LS132	QUAD SCHMITT TRIGGER	7400
N74LS136	QUAD EX - OR GATE	7486
N74LS154	4/16 DECODER/DEMULTIPLEXER (FSC 9311)	75154
N74LS173	QUAD "D" REG (TS)	74173
N74LS192	U/D DECADE CTR	74192
N74LS266	QUAD EX - NOR GATE	74266
THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: D, F, N.		
N74S00	QUAD 2 - INPUT GATE	7400
N74S02	QUAD 2 - INPUT NOR GATE	7402
N74S04	HEX INVERTER	7404
N74S08	QUAD 2 - INPUT POSITIVE AND GATE	7408
N74S10	TRIPLE 3 - INPUT NAND GATE	7410
N74S32	QUAD 2 - INPUT OR GATE	7432
N74S74	DUAL D FLIP FLOP	7474
N74S151	8 LINE MULTIPLEXER	74151
THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: F, N.		
N74S03	QUAD 2 - INPUT GATE (OPEN COLLECTOR)	7400
N74S05	HEX INVERTER (OPEN COLLECTOR)	7404
N74S11	TRIPLE 3 - INPUT AND GATE	7411
N74S20	DUAL 4 - INPUT GATE	7420
N74S37	QUAD 2 - INPUT NAND BUFFER	7400
N74S38	QUAD 2 - INPUT NAND BUFFER (OC)	7400
N74S40	DUAL 4 - INPUT BUFFER	7420
N74S86	QUAD EXCLUSIVE - OR GATE	7486
N74S138	EXP SNGL 3/8 DECODER	74138
N74S139	EXP DUAL 2/4 DECODER	74139
N74S140	DUAL 4 - INPUT NAND DRIVER	7420
N74S153	DUAL 4 - INPUT MULTIPLEXER	74153
N74S157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157
N74S174	HEX "D" F/F	74174
N74S175	QUAD "D" F/F	74175

IC#	FUNCTION	ICT-101 SIGNATURE
N74S240	OCTAL INV BUS/LINE DRIVER	74240
N74S241	TRI-STATE OCTAL BUS/LINE DRIVER	74241
N74S244	TRI-STATE OCTAL DRIVER (NON-INVERTING)	74244
N74S251	TRI-STATE MULTIPLEXER	74151
N74S253	DUAL 4 - IN MUX (TS)	74153
N74S257	QUAD 2 - IN MUX	74157
N74S374	TRI-STATE OCTAL D FLIP FLOP	74374

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THE FOLLOWING IC'S INCLUDE THIS SUFFIX: B.

HEF4002	BUFFERED DUAL 4 - INPUT NOR GATE	4002
HEF4012	BUFFERED DUAL 4 - INPUT NAND GATE	4012
HEF4013	DUAL D FLIP FLOP	4013
HEF4017	DECADE COUNTER/DIVIDER	4017
HEF4020	14 - STAGE RIPPLE - CARRY BINARY COUNTER	4020
HEF4022	DIVIDE BY 8 COUNTER/DIVIDER	4022
HEF4023	BUFFERED TRIPLE 3 - INPUT NAND GATE	4023
HEF4024	7 BIT BINARY COUNTER	4024
HEF4025	BUFFERED TRIPLE 3 - INPUT NOR GATE	4025
HEF4028	BCD - TO - DECIMAL DECODER	4028
HEF4030	QUAD EX - OR GATE	4030
HEF4040	12 - BIT BINARY RIPPLE COUNTER	4040
HEF4052	DIFFERENTIAL 4 - CHANNEL MULTIPLEXER	4052
HEF4070	QUAD EXCLUSIVE OR GATE	4030
HEF4071	BUFFERED QUAD 2 - INPUT OR GATE	4071
HEF4072	BUFFERED DUAL 4 - INPUT OR GATE	4072
HEF4073	TRIPLE 3 - INPUT AND GATE	4073
HEF4075	TRIPLE 3 - INPUT OR GATE	4075
HEF4081	BUFFERED QUAD 2 - INPUT AND GATE	4081
HEF4082	BUFFERED DUAL 4 - INPUT AND GATE	4082
HEF4093	QUAD 2 - INPUT NAND SCHMITT TRIGGER	4081
HEF4502	STROBED - HEX INV/BUFFER	4502
HEF4511	BCD - TO - 7 SEGMENT DECODER DRIVER	74C48
HEF4543	BCD - TO -7 SEGMENT DECODER (LCD)	74C48

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: B, UB.

HEF4001	BUFFERED QUAD 2 - INPUT NOR GATE	4001
HEF4011	BUFFERED QUAD 2 - INPUT NAND GATE	4011

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
BDF, BPN, BTD.

IC#	FUNCTION	ICT-101 SIGNATURE
HEF4001	BUFFERED QUAD 2 - INPUT NOR GATE	4001
HEF4002	BUFFERED DUAL 4 - INPUT NOR GATE	4002
HEF4011	BUFFERED QUAD 2 - INPUT NAND GATE	4011
HEF4012	BUFFERED DUAL 4 - INPUT NAND GATE	4012
HEF4013	DUAL D FLIP FLOP	4013
HEF4017	DECADE COUNTER/DIVIDER	4017
HEF4020	14 - STAGE RIPPLE - CARRY BINARY COUNTER	4020
HEF4022	DIVIDE BY 8 COUNTER/DIVIDER	4022
HEF4023	BUFFERED TRIPLE 3 - INPUT NAND GATE	4023
HEF4024	7 BIT BINARY COUNTER	4024
HEF4025	BUFFERED TRIPLE 3 - INPUT NOR GATE	4025
HEF4028	BCD - TO - DECIMAL DECODER	4028
HEF4030	QUAD EX - OR GATE	4030
HEF4040	12 - BIT BINARY RIPPLE COUNTER	4040
HEF4052	DIFFERENTIAL 4 - CHANNEL MULTIPLEXER	4052
HEF4069	HEX INVERTER	74C04
HEF4070	QUAD EXCLUSIVE OR GATE	4030
HEF4071	BUFFERED QUAD 2 - INPUT OR GATE	4071
HEF4072	BUFFERED DUAL 4 - INPUT OR GATE	4072
HEF4073	TRIPLE 3 - INPUT AND GATE	4073
HEF4075	TRIPLE 3 - INPUT OR GATE	4075
HEF4081	BUFFERED QUAD 2 - INPUT AND GATE	4081
HEF4082	BUFFERED DUAL 4 - INPUT AND GATE	4082
HEF4093	QUAD 2 - INPUT NAND SCHMITT TRIGGER	4081
HEF4502	STROBED - HEX INV/BUFFER	4502
HEF4511	BCD - TO - 7 SEGMENT DECODER DRIVER	74C48
HEF4543	BCD - TO -7 SEGMENT DECODER (LCD)	74C48
HEF40174	HEX D FLIP FLOP	74C174
HEF40175	QUAD D FLIP FLOP	74C175
HEF40192	DECADE UP/DOWN COUNTER	74C192
HEF40193	BINARY UP/DOWN COUNTER	74C193

THE FOLLOWING IC INCLUDES THIS SUFFIX: UB.

IC#	FUNCTION	ICT-101 SIGNATURE
HEF4069	HEX INVERTER	74C04

MILITARY

COMPANY NAME KEY LISTING

F - FAIRCHILD
M - MOTOROLA
N - NATIONAL
R - RCA
S - SIGNETICS
T - T.I.

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: BABJC, BCBJC.

IC#	FUNCTION	ICT-101 SIGNATURE	CO
5400	QUAD 2 - INPUT GATE	7400	M
5402	QUAD 2 - INPUT NOR GATE	7402	M
5404	HEX INVERTER	7404	M
5405	HEX INVERTER (OPEN COLLECTOR)	7404	M
5406	30V - 40MA HEX INVERTER	7404	M
5408	QUAD 2 - INPUT POSITIVE AND GATE.	7408	M
5409	QUAD 2 - INPUT AND GATE (OC)	7408	M
5410	TRIPLE 3 - INPUT NAND GATE	7410	M
5413	DUAL SCHMITT TRIGGER	7420	M
5414	HEX SCHMITT TRIGGER	7404	M
5416	15V - 40MA HEX INVERTER	7404	M
5420	DUAL 4 - INPUT GATE	7420	M
5427	TRIPLE 3 - INPUT NOR GATE	7427	M
5430	8 - INPUT GATE	7430	M
5437	QUAD 2 - INPUT NAND BUFFER	7400	M
5438	QUAD 2 - INPUT NAND BUFFER (OC)	7400	M
5440	DUAL 4 - INPUT BUFFER	7420	M
5474	DUAL D FLIP FLOP	7474	M
5486	QUAD EXCLUSIVE - OR GATE	7486	M
5403BCBJC	QUAD 2 - INPUT GATE (OPEN COLLECTOR)	7400	M

IC#	FUNCTION	ICT-101 SIGNATURE	CO

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
BEBJC, BFBJC.

IC#	FUNCTION	ICT-101 SIGNATURE	CO
5442	BCD - TO - DECIMAL DECODER	7442	M
5445	BCD - TO - DECIMAL DECODER/DRIVER	7442	M

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
DM, DMQB.

IC#	FUNCTION	ICT-101 SIGNATURE	CO
5400	QUAD 2 - INPUT GATE	7400	F
5402	QUAD 2 - INPUT NOR GATE	7402	F
5403	QUAD 2 - INPUT GATE (OPEN COLLECTOR)	7400	F
5404	HEX INVERTER	7404	F
5405	HEX INVERTER (OPEN COLLECTOR)	7404	F
5406	30V - 40MA HEX INVERTER	7404	F
5408	QUAD 2 - INPUT POSITIVE AND GATE	7408	F
5409	QUAD 2 - INPUT AND GATE (OC)	7408	F
5410	TRIPLE 3 - INPUT NAND GATE	7410	F
5412	TRIPLE 3 - INPUT NAND GATE (OC)	7410	F
5413	DUAL SCHMITT TRIGGER	7420	F
5414	HEX SCHMITT TRIGGER	7404	F
5416	15V - 40MA HEX INVERTER	7404	F
5420	DUAL 4 - INPUT GATE	7420	F
5421	DUAL 4 - INPUT AND GATE	7421	F
5426	QUAD 2 - INPUT NAND GATE (HV)	7400	F
5427	TRIPLE 3 - INPUT NOR GATE	7427	F
5430	8 - INPUT GATE	7430	F
5432	QUAD 2 - INPUT OR GATE	7432	F
5437	QUAD 2 - INPUT NAND BUFFER	7400	F
5438	QUAD 2 - INPUT NAND BUFFER (OC)	7400	F
5440	DUAL 4 - INPUT BUFFER	7420	F
5442	BCD - TO - DECIMAL DECODER	7442	F
5445	BCD - TO - DECIMAL DECODER/DRIVER	7442	F
5474	DUAL D FLIP FLOP	7474	F
5486	QUAD EXCLUSIVE - OR GATE	7486	F
54107	DUAL J-K FLIP FLOP	74107	F
54132	QUAD SCHMITT TRIGGER	7400	F
54145	BCD - TO - DECIMAL DECODER/DRIVER	7442	F
54151	8 LINE MULTIPLEXER	74151	F
54153	DUAL 4 - INPUT MULTIPLEXER	74153	F
54157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157	F
54160	PRESET DECADE CTR	74160	F
54161	PRESET BINARY CTR	74161	F
54163	PRESET DECADE CTR (SYN CLR)	74161	F
54174	HEX "D" F/F	74174	F
54175	QUAD "D" F/F	74175	F

IC#	FUNCTION	ICT-101 SIGNATURE	CO
54192	U/D DECADE CTR	74192	F
54193	U/D BINARY CTR	74193	F

THE FOLLOWING IC INCLUDES THESE SUFFIXES:
DM, DMQB, FMQB.

IC#	FUNCTION	ICT-101 SIGNATURE	CO
54173	QUAD "D" REG (TS)	74173	F

THE FOLLOWING IC'S INCLUDE THIS SUFFIX: DMQB.

IC#	FUNCTION	ICT-101 SIGNATURE	CO
5448	BCD - 7 SEG DECODER/DRIVER (ACTIVE HI)	7448	F
54162	PRESET DECADE CTR (SYN CLR)	74160	F

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
AJ, AJ/883, AW/883.

IC#	FUNCTION	ICT-101 SIGNATURE	CO
DM54151	8 LINE MULTIPLEXER	74151	N
DM54160	PRESET DECADE CTR	74160	N
DM54161	PRESET BINARY CTR	74161	N
DM54162	PRESET DECADE CTR (SYN CLR)	74160	N
DM54163	PRESET DECADE CTR (SYN CLR)	74161	N

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
J, J/883.

IC#	FUNCTION	ICT-101 SIGNATURE	CO
DM5403	QUAD 2 - INPUT GATE (OPEN COLLECTOR)	7400	N
DM5411	TRIPLE 3 - INPUT AND GATE	7411	N
DM5426	QUAD 2 - INPUT NAND GATE (HV)	7400	N
DM54107	DUAL J-K FLIP FLOP	74107	N
DM54154	4/16 DECODER/DEMULTIPLEXER (FSC 9311)	75154	N

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
J, J/883, W/833.

IC#	FUNCTION	ICT-101 SIGNATURE	CO
DM5400	QUAD 2 - INPUT GATE	7400	N
DM5402	QUAD 2 - INPUT NOR GATE	7402	N
DM5404	HEX INVERTER	7404	N
DM5405	HEX INVERTER (OPEN COLLECTOR)	7404	N
DM5406	30V - 40MA HEX INVERTER	7404	N
DM5408	QUAD 2 - INPUT POSITIVE AND GATE	7408	N
DM5409	QUAD 2 - INPUT AND GATE (OC)	7408	N
DM5410	TRIPLE 3 - INPUT NAND GATE	7410	N

IC#	FUNCTION	ICT-101 SIGNATURE	CO
DM5413	DUAL SCHMITT TRIGGER	7420	N
DM5414	HEX SCHMITT TRIGGER	7404	N
DM5416	15V - 40MA HEX INVERTER	7404	N
DM5420	DUAL 4 - INPUT GATE	7420	N
DM5427	TRIPLE 3 - INPUT NOR GATE	7427	N
DM5430	8 - INPUT GATE	7430	N
DM5432	QUAD 2 - INPUT OR GATE	7432	N
DM5437	QUAD 2 - INPUT NAND BUFFER	7400	N
DM5438	QUAD 2 - INPUT NAND BUFFER (OC)	7400	N
DM5440	DUAL 4 - INPUT BUFFER	7420	N
DM5442	BCD - TO - DECIMAL DECODER	7442	N
DM5445	BCD - TO - DECIMAL DECODER/DRIVER	7442	N
DM5448	BCD - 7 SEG DECODER/DRIVER (ACTIVE HI)	7448	N
DM5474	DUAL D FLIP FLOP	7474	N
DM5486	QUAD EXCLUSIVE - OR GATE	7486	N
DM54132	QUAD SCHMITT TRIGGER	7400	N
DM54145	BCD - TO - DECIMAL DECODER/DRIVER	7442	N
DM54147	10/4 PRIORITY ENCODER	74147	N
DM54153	DUAL 4 - INPUT MULTIPLEXER	74153	N
DM54157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157	N
DM54173	QUAD "D" REG (TS)	74173	N
DM54174	HEX "D" F/F	74174	N
DM54175	QUAD "D" F/F	74175	N
DM54192	U/D DECADE CTR	74192	N
DM54193	U/D BINARY CTR	74193	N
DM54365	HEX BUFF (TS)	74365	N
DM54366	HEX INV (TS)	74366	N
DM54367	HEX BUFF (4-2) (TS)	74367	N
DM54368	HEX INV (4-2) (TS)	74367	N

THE FOLLOWING IC'S INCLUDE THIS SUFFIX: AF.

JB54365	HEX BUFF (TS)	74365	S
JB54366	HEX INV (TS)	74366	S
JB54367	HEX BUFF (4-2) (TS)	74367	S
JB54368	HEX INV (4-2) (TS)	74368	S

THE FOLLOWING IC'S INCLUDE THIS SUFFIX: F.

JB5426	QUAD 2 - INPUT NAND GATE (HV)	7400	S
JB54154	4/16 DECODER/DEMULTIPLEXER (FSC 9311)	75154	S

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: F, W.

IC#	FUNCTION	ICT-101 SIGNATURE	CO
JB5400	QUAD 2 - INPUT GATE	7400	S
JB5404	HEX INVERTER	7404	S
JB5420	DUAL 4 - INPUT GATE	7420	S
JB5432	QUAD 2 - INPUT OR GATE	7432	S
JB5442	BCD - TO - DECIMAL DECODER	7442	S
JB5474	DUAL D FLIP FLOP	7474	S
JB5486	QUAD EXCLUSIVE - OR GATE	7486	S
JB54132	QUAD SCHMITT TRIGGER	7400	S
JB54151	8 LINE MULTIPLEXER	74151	S
JB54153	DUAL 4 - INPUT MULTIPLEXER	74153	S
JB54157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157	S
JB54160	PRESET DECADE CTR	74160	S
JB54161	PRESET BINARY CTR	74161	S
JB54163	PRESET DECADE CTR (SYN CLR)	74161	S
JB54174	HEX "D" F/F	74174	S
JB54175	QUAD "D" F/F	74175	S
JB54193	U/D BINARY CTR	74193	S

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
BCA, BCB.

JM38510/00101	8 - INPUT GATE	7430	N
JM38510/00102	DUAL 4 - INPUT GATE	7420	N
JM38510/00103	TRIPLE 3 - INPUT NAND GATE	7410	N
JM38510/00104	QUAD 2 - INPUT GATE	7400	N
JM38510/00105	HEX INVERTER	7404	N
JM38510/00108	HEX INVERTER (OPEN COLLECTOR)	7404	N
JM38510/00109	QUAD 2 - INPUT GATE (OPEN COLLECTOR)	7400	N
JM38510/00203	DUAL J-K FLIP FLOP	74107	N
JM38510/00205	DUAL D FLIP FLOP	7474	N
JM38510/00301	DUAL 4 - INPUT BUFFER	7420	N
JM38510/00302	QUAD 2 - INPUT NAND BUFFER	7400	N
JM38510/00303	QUAD 2 - INPUT NAND BUFFER (OC)	7400	N
JM38510/00401	QUAD 2 - INPUT NOR GATE	7402	N
JM38510/00701	QUAD EXCLUSIVE - OR GATE	7486	N
JM38510/00801	30V - 40MA HEX INVERTER	7404	N
JM38510/00802	15V - 40MA HEX INVERTER	7404	N
JM38510/01601	QUAD 2 - INPUT POSITIVE AND GATE	7408	N
JM38510/02001	8 - INPUT GATE	7430	N
JM38510/02002	DUAL 4 - INPUT GATE	7420	N
JM38510/02003	TRIPLE 3 - INPUT NAND GATE	7410	N
JM38510/02004	QUAD 2 - INPUT GATE	7400	N
JM38510/02005	HEX INVERTER	7404	N
JM38510/02105	DUAL D FLIP FLOP	7474	N

IC#	FUNCTION	ICT-101 SIGNATURE	CO
JM38510/02601	QUAD EXCLUSIVE - OR GATE	7486	N
JM38510/02701	QUAD 2 - INPUT NOR GATE	7402	N
JM38510/30001	QUAD 2 - INPUT GATE	7400	N
JM38510/30003	HEX INVERTER	7404	N
JM38510/30004	HEX INVERTER (OPEN COLLECTOR)	7404	N
JM38510/30005	TRIPLE 3 - INPUT NAND GATE	7410	N
JM38510/30006	TRIPLE 3 - INPUT NAND GATE (OC)	7410	N
JM38510/30007	DUAL 4 - INPUT GATE	7420	N
JM38510/30008	DUAL 4 - INPUT NAND GATE (OC)	7420	N
JM38510/30009	8 - INPUT GATE	7430	N
JM38510/30201	DUAL 4 - INPUT BUFFER	7420	N
JM38510/30202	QUAD 2 - INPUT NAND BUFFER	7400	N
JM38510/30301	QUAD 2 - INPUT NOR GATE	7402	N
JM38510/30302	TRIPLE 3 - INPUT NOR GATE	7427	N
JM38510/30502	QUAD EXCLUSIVE - OR GATE	7486	N
JM38510/31001	TRIPLE 3 - INPUT AND GATE	7411	N
JM38510/31002	TRIPLE 3 - INPUT AND GATE (OC)	7411	N
JM38510/31004	QUAD 2 - INPUT POSITIVE AND GATE	7408	N

THE FOLLOWING IC'S INCLUDE THIS SUFFIX: BCB.

IC#	FUNCTION	ICT-101 SIGNATURE	CO
JM38510/30002	QUAD 2 - INPUT GATE (OPEN COLLECTOR)	7400	N

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
BCB, BDB.

IC#	FUNCTION	ICT-101 SIGNATURE	CO
JM38510/00102	DUAL 4 - INPUT GATE	7420	S
JM38510/00104	QUAD 2 - INPUT GATE	7400	S
JM38510/00105	HEX INVERTER	7404	S
JM38510/00205	DUAL D FLIP FLOP	7474	S
JM38510/00701	QUAD EXCLUSIVE - OR GATE	7486	S
JM38510/07001	QUAD 2 - INPUT GATE	7400	S
JM38510/07003	HEX INVERTER	7404	S
JM38510/07005	TRIPLE 3 - INPUT NAND GATE	7410	S
JM38510/07101	DUAL D FLIP FLOP	7474	S
JM38510/07201	DUAL 4 - INSERT BUFFER	7420	S
JM38510/07301	QUAD 2 - INPUT NOR GATE	7402	S
JM38510/07501	QUAD EXCLUSIVE - OR GATE	7486	S
JM38510/08001	TRIPLE 3 - INPUT AND GATE	7411	S
JM38510/08003	QUAD 2 - INPUT POSITIVE AND GATE	7408	S
JM38510/08101	HEX SCHMITT TRIGGER	7404	S
JM38510/15103	QUAD SCHMITT TRIGGER	7400	S
JM38510/16101	QUAD 2 - INPUT OR GATE	7432	S
JM38510/30001	QUAD 2 - INPUT GATE	7400	S
JM38510/30003	HEX INVERTER	7404	S

IC#	FUNCTION	ICT-101 SIGNATURE	CO
JM38510/30005	TRIPLE 3 - INPUT NAND GATE	7410	S
JM38510/30007	DUAL 4 - INPUT GATE	7420	S
JM38510/30102	DUAL D FLIP FLOP	7474	S
JM38510/30108	DUAL J-K FLIP FLOP	74107	S
JM38510/30202	QUAD 2 - INPUT NAND BUFFER	7400	S
JM38510/30301	QUAD 2 - INPUT NOR GATE	7402	S
JM38510/30303	QUAD EX - NOR GATE	74266	S
JM38510/30501	QUAD 2 - INPUT OR GATE	7432	S
JM38510/30502	QUAD EXCLUSIVE - OR GATE	7486	S
JM38510/31004	QUAD 2 - INPUT POSITIVE AND GATE	7408	S
JM38510/31302	HEX SCHMITT TRIGGER	7404	S
JM38510/31303	QUAD SCHMITT TRIGGER	7400	S

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
BEA, BEB.

JM38510/30106	HEX "D" F/F	74174	N
JM38510/30701	EXP SNGL 3/8 DECODER	74138	N
JM38510/30702	EXP DUAL 2/4 DECODER	74139	N

THE FOLLOWING IC'S INCLUDE THIS SUFFIX: BEB.

JM38510/01001	BCD - TO - DECIMAL DECODER	7442	N
JM38510/01403	DUAL 4 - INPUT MULTIPLEXER	74153	N
JM38510/01405	QUAD 2 - INPUT MULTIPLEXER (9322)	74157	N
JM38510/30901	8 LINE MULTIPLEXER	74151	N
JM38510/30902	DUAL 4 - INPUT MULTIPLEXER	74153	N
JM38510/30903	QUAD 2 - INPUT MULTIPLEXER (9322)	74157	N
JM38510/30908	DUAL 4 - IN MUX (TS)	74153	N

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
BEB, BFB.

JM38510/01001	BCD - TO - DECIMAL DECODER	7442	S
JM38510/01303	PRESET DECADE CTR	74160	S
JM38510/01304	PRESET DECADE CTR (SYN CLR)	74161	S
JM38510/01306	PRESET BINARY CTR	74161	S
JM38510/01403	DUAL 4 - INPUT MULTIPLEXER	74153	S
JM38510/01405	QUAD 2 - INPUT MULTIPLEXER (9322)	74157	S
JM38510/01406	8 LINE MULTIPLEXER	74151	S
JM38510/01701	HEX "D" F/F	74174	S
JM38510/01702	QUAD "D" F/F	74175	S
JM38510/07901	8 LINE MULTIPLEXER	74151	S
JM38510/07902	DUAL 4 - INPUT MULTIPLEXER	74153	S

IC#	FUNCTION	ICT-101 SIGNATURE	CO
JM38510/07903	QUAD 2 - INPUT MULTIPLEXER (9322)	74157	S
JM38510/30106	HEX "D" F/F	74174	S
JM38510/30107	QUAD "D" F/F	74175	S
JM38510/30701	EXP SNGL 3/8 DECODER	74138	S
JM38510/30702	EXP DUAL 2/4 DECODER	74139	S
JM38510/30703	BCD - TO - DECIMAL DECODER	7442	S
JM38510/30902	DUAL 4 - INPUT MULTIPLEXER	74153	S
JM38510/30906	QUAD 2 - IN MUX	74157	S
JM38510/31504	PRESET BINARY CTR	74161	S
JM38510/31507	U/D DECADE CTR	74192	S
JM38510/31508	U/D BINARY CTR	74193	S
JM38510/31512	PRESET DECADE CTR (SYN CLR)	74161	S
JM38510/31601	QUAD LATCH	7475	S
JM38510/32201	HEX BUFF (TS)	74365	S
JM38510/32203	HEX BUFF (4-2) (TS)	74367	S
JM38510/32204	HEX INV (4-2) (TS)	74368	S

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
AF/883B, AR/883B.

S54365	HEX BUFF (TS)	74365	S
S54366	HEX INV (TS)	74366	S
S54367	HEX BUFF (4-2) (TS)	74367	S
S54368	HEX INV (4-2) (TS)	74368	S

THE FOLLOWING IC'S INCLUDE THIS SUFFIXES:
F/883B.

S5403	QUAD 2 - INPUT GATE (OPEN COLLECTOR)	7400	S
S54154	4/16 DECODER/DEMULTIPLEXER (FSC 9311)	74154	S

THE FOLLOWING IC'S INCLUDE THIS SUFFIXES:
F/883B, W/883B.

S5400	QUAD 2 - INPUT GATE	7400	S
S5404	HEX INVERTER	7404	S
S5411	TRIPLE 3 - INPUT AND GATE	7411	S
S5414	HEX SCHMITT TRIGGER	7404	S
S5420	DUAL 4 - INPUT GATE	7420	S
S5432	QUAD 2 - INPUT OR GATE	7432	S
S5442	BCD - TO - DECIMAL DECODER	7442	S
S5474	DUAL D FLIP FLOP	7474	S
S5486	QUAD EXCLUSIVE - OR GATE	7486	S
S54132	QUAD SCHMITT TRIGGER	7400	S

IC#	FUNCTION	ICT-101 SIGNATURE	CO
S54147	10/4 PRIORITY ENCODER	74147	S
S54151	8 LINE MULTIPLEXER	74151	S
S54153	DUAL 4 - INPUT MULTIPLEXER	74153	S
S54157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157	S
S54160	PRESET DECADE CTR	74160	S
S54161	PRESET BINARY CTR	74161	S
S54163	PRESET DECADE CTR (SYN CLR)	74161	S
S54174	HEX "D" F/F	74174	S
S54175	QUAD "D" F/F	74175	S
S54193	U/D BINARY CTR	74193	S
SN5400	QUAD 2 - INPUT GATE	7400	T
SN5402	QUAD 2 - INPUT NOR GATE	7402	T
SN5403	QUAD 2 - INPUT GATE (OPEN COLLECTOR)	7400	T
SN5404	HEX INVERTER	7404	T
SN5405	HEX INVERTER (OPEN COLLECTOR)	7404	T
SN5406	30V - 40MA HEX INVERTER	7404	T
SN5408	QUAD 2 - INPUT POSITIVE AND GATE	7408	T
SN5409	QUAD 2 - INPUT AND GATE (OC)	7408	T
SN5410	TRIPLE 3 - INPUT NAND GATE	7410	T
SN5412	TRIPLE 3 - INPUT NAND GATE (OC)	7410	T
SN5413	DUAL SCHMITT TRIGGER	7420	T
SN5414	HEX SCHMITT TRIGGER	7404	T
SN5416	15V - 40MA HEX INVERTER	7404	T
SN5420	DUAL 4 - INPUT GATE	7420	T
SN5422	DUAL 4 - INPUT NAND GATE (OC)	7420	T
SN5426	QUAD 2 - INPUT NAND GATE (HV)	7400	T
SN5427	TRIPLE 3 - INPUT NOR GATE	7427	T
SN5428	QUAD 2 - INPUT NOR BUFFER	7402	T
SN5430	8 - INPUT GATE	7430	T
SN5432	QUAD 2 - INPUT OR GATE	7432	T
SN5433	QUAD 2 - INPUT NOR BUFFER (OC)	7402	T
SN5437	QUAD 2 - INPUT NAND BUFFER	7400	T
SN5438	QUAD 2 - INPUT NAND BUFFER (OC)	7400	T
SN5440	DUAL 4 - INPUT BUFFER	7420	T
SN5445	BCD - TO - DECIMAL DECODER/DRIVER	7442	T
SN5448	BCD-7 SEG DECODER/DRIVER (ACTIVE HI)	7448	T
SN5474	DUAL D FLIP FLOP	7474	T
SN5486	QUAD EXCLUSIVE - OR GATE	7486	T
SN54107	DUAL J-K FLIP FLOP	74107	T
SN54128	QUAD 2 - INPUT NOR GATE	7402	T
SN54132	QUAD SCHMITT TRIGGER	7400	T
SN54136	QUAD EX - OR GATE	7486	T
SN54145	BCD - TO - DECIMAL DECODER/DRIVER	7442	T
SN54147	10/4 PRIORITY ENCODER	74147	T
SN54153	DUAL 4 - INPUT MULTIPLEXER	74153	T

IC#	FUNCTION	ICT-101 SIGNATURE	CO
SN54154	4/16 DECODER/DEMULTIPLEXER (FSC 9311)	74154	T
SN54157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157	T
SN54160	PRESET DECADE CTR	74160	T
SN54161	PRESET BINARY CTR	74161	T
SN54162	PRESET DECADE CTR (SNY CLR)	74160	T
SN54163	PRESET DECADE CTR (SYN CLR)	74161	T
SN54173	QUAD "D" REG (TS)	74173	T
SN54174	HEX "D" F/F	74174	T
SN54175	QUAD "D" F/F	74175	T
SN54192	U/D DECADE CTR	74192	T
SN54193	U/D BINARY CTR	74193	T
SN54251	TRI-STATE MULTIPLEXER	74151	T
SN54259	8 - BIT ADDRESSABLE LATCH	74259	T

THE FOLLOWING IC'S INCLUDE THIS SUFFIX: A.

SN5442	BCD - TO - DECIMAL DECODER	7442	T
SN54151	8 LINE MULTIPLEXER	74151	T
SN54365	HEX BUFF (TS)	74365	T
SN54366	HEX INV (TS)	74366	T
SN54367	HEX BUFF (4-2) (TS)	74367	T
SN54368	HEX INV (4-2) (TS)	74368	T

THE FOLLOWING IC'S INCLUDE THIS SUFFIX: J.

DM54ALS00	QUAD 2 - INPUT GATE	7400	N
DM54ALS02	QUAD 2 - INPUT NOR GATE	7402	N
DM54ALS03	QUAD 2 - INPUT GATE (OPEN COLLECTOR)	7400	N
DM54ALS04	HEX INVERTER	7404	N
DM54ALS05	HEX INVERTER (OPEN COLLECTOR)	7404	N
DM54ALS08	QUAD 2 - INPUT POSITIVE AND GATE	7408	N
DM54ALS09	QUAD 2 - INPUT AND GATE (OC)	7408	N
DM54ALS10	TRIPLE 3 - INPUT NAND GATE	7410	N
DM54ALS11	TRIPLE 3 - INPUT AND GATE	7411	N
DM54ALS12	TRIPLE 3 - INPUT NAND GATE (OC)	7410	N
DM54ALS15	TRIPLE 3 - INPUT AND GATE (OC)	7411	N
DM54ALS20	DUAL 4 - INPUT GATE	7420	N
DM54ALS21	DUAL 4 - INPUT AND GATE	7421	N
DM54ALS22	DUAL 4 - INPUT NAND GATE (OC)	7420	N
DM54ALS27	TRIPLE 3 - INPUT NOR GATE	7427	N
DM54ALS28	QUAD 2 - INPUT NOR BUFFER	7402	N
DM54ALS30	8 - INPUT GATE	7430	N
DM54ALS32	QUAD 2 - INPUT OR GATE	7432	N
DM54ALS138	EXP SNGL 3/8 DECODER	74138	N
DM54ALS162	PRESET DECADE CTR (SNY CLR)	74160	N

IC#	FUNCTION	ICT-101 SIGNATURE	CO
DM54ALS163	PRESET DECADE CTR (SYN CLR)	74161	N
DM54ALS374	TRI-STATE OCTAL D FLIP FLOP	74374	N
SN54ALS00	QUAD 2 - INPUT GATE	7400	T
SN54ALS02	QUAD 2 - INPUT NOR GATE	7402	T
SN54ALS03	QUAD 2 - INPUT GATE (OPEN COLLECTOR)	7400	T
SN54ALS04	HEX INVERTER	7404	T
SN54ALS05	HEX INVERTER (OPEN COLLECTOR)	7404	T
SN54ALS08	QUAD 2 - INPUT POSITIVE AND GATE	7408	T
SN54ALS09	QUAD 2 - INPUT GATE (OC)	7408	T
SN54ALS10	TRIPLE 3 - INPUT NAND GATE	7410	T
SN54ALS11	TRIPLE 3 - INPUT AND GATE	7411	T
SN54ALS12	TRIPLE 3 - INPUT NAND GATE (OC)	7410	T
SN54ALS15	TRIPLE 3 - INPUT AND GATE (OC)	7411	T
SN54ALS20	DUAL 4 - INPUT GATE	7420	T
SN54ALS21	DUAL 4 - INPUT AND GATE	7421	T
SN54ALS22	DUAL 4 - INPUT NAND GATE (OC)	7420	T
SN54ALS27	TRIPLE 3 - INPUT NOR GATE	7427	T
SN54ALS28	QUAD 2 - INPUT NOR BUFFER	7402	T
SN54ALS30	8 - INPUT GATE	7430	T
SN54ALS32	QUAD 2 - INPUT OR GATE	7432	T
SN54ALS33	QUAD 2 - INPUT NOR BUFFER (OC)	7402	T
SN54ALS37	QUAD 2 - INPUT NAND BUFFER	7400	T
SN54ALS38	QUAD 2 - INPUT NAND BUFFER (OC)	7400	T
SN54ALS40	DUAL 4 - INPUT BUFFER	7420	T

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
BCBJC, BDBJC, BUCJC.

IC#	FUNCTION	ICT-101 SIGNATURE	CO
54F00	QUAD 2 - INPUT GATE	7400	M
54F02	QUAD 2 - INPUT NOR GATE	7402	M
54F04	HEX INVERTER	7404	M
54F08	QUAD 2 - INPUT POSITIVE AND GATE	7408	M
54F10	TRIPLE 3 - INPUT NAND GATE	7410	M
54F11	TRIPLE 3 - INPUT AND GATE	7411	M
54F20	DUAL 4 - INPUT GATE	7420	M
54F32	QUAD 2 - INPUT OR GATE	7432	M

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
BABJC, BCBJC.

IC#	FUNCTION	ICT-101 SIGNATURE	CO
54H00	QUAD 2 - INPUT GATE	7400	M
54H04	HEX INVERTER	7404	M
54H08	QUAD 2 - INPUT POSITIVE AND GATE	7408	M

IC#	FUNCTION	ICT-101 SIGNATURE	CO
54H10	TRIPLE 3 - INPUT NAND GATE	7410	M
54H11	TRIPLE 3 - INPUT AND GATE	7411	M
54H20	DUAL 4 - INPUT GATE	7420	M
54H21	DUAL 4 - INPUT AND GATE	7421	M
54H30	8 - INPUT GATE	7430	M
54H40	DUAL 4 - INPUT BUFFER	7420	M

THE FOLLOWING IC'S INCLUDE THIS SUFFIX: J.

DM54H00	QUAD 2 - INPUT GATE	7400	N
DM54H04	HEX INVERTER	7404	N
DM54H08	QUAD 2 - INPUT POSITIVE AND GATE	7408	N
DM54H11	TRIPLE 3 - INPUT AND GATE	7411	N
DM54H20	DUAL 4 - INPUT GATE	7420	N
DM54H21	DUAL 4 - INPUT AND GATE	7421	N
DM54H30	8 - INPUT GATE	7430	N
DM54H40	DUAL 4 - INPUT BUFFER	7420	N
DM54H74	DUAL D FLIP FLOP	7474	N

THE FOLLOWING IC INCLUDES THESE SUFFIXES:
J, J/883.

DM54H10	TRIPLE 3 - INPUT NAND GATE	7410	N

SN54H00	QUAD 2 - INPUT GATE	7400	T
SN54H04	HEX INVERTER	7404	T
SN54H05	HEX INVERTER (OPEN COLLECTOR)	7404	T
SN54H10	TRIPLE 3 - INPUT NAND GATE	7410	T
SN54H11	TRIPLE 3 - INPUT AND GATE	7411	T
SN54H15	TRIPLE 3 - INPUT AND GATE (OC)	7411	T
SN54H20	DUAL 4 - INPUT GATE	7420	T
SN54H21	DUAL 4 - INPUT AND GATE	7421	T
SN54H22	DUAL 4 - INPUT NAND GATE (OC)	7420	T
SN54H30	8 - INPUT GATE	7430	T
SN54H40	DUAL 4 - INPUT BUFFER	7420	T
SN54H74	DUAL D FLIP FLOP	7474	T

THE FOLLOWING IC'S INCLUDE THIS SUFFIX: F.

CD54HCT00	QUAD 2 - INPUT GATE	7400	R
CD54HCT02	QUAD 2 - INPUT NOR GATE	7402	R
CD54HCT04	HEX INVERTER	7404	R
CD54HCT08	QUAD 2 - INPUT POSITIVE AND GATE	7408	R

IC#	FUNCTION	ICT-101 SIGNATURE	CO
CD54HCT10	TRIPLE 3 - INPUT NAND GATE	7410	R
CD54HCT11	TRIPLE 3 - INPUT AND GATE	7411	R
CD54HCT14	HEX SCHMITT TRIGGER	7404	R
CD54HCT20	DUAL 4 - INPUT GATE	7420	R
CD54HCT27	TRIPLE 3 - INPUT NOR GATE	7427	R
CD54HCT30	8 - INPUT GATE	7430	R
CD54HCT32	QUAD 2 - INPUT OR GATE	7432	R
CD54HCT42	BCD - TO - DECIMAL DECODER	7442	R
CD54HCT74	DUAL D FLIP FLOP	7474	R
CD54HCT86	QUAD EXCLUSIVE - OR GATE	7486	R
CD54HCT107	DUAL J-K FLIP FLOP	74107	R
CD54HCT132	QUAD SCHMITT TRIGGER	7400	R
CD54HCT138	EXP SNGL 3/8 DECODER	74138	R
CD54HCT139	EXP.DUAL 2/4 DECODER	74139	R
CD54HCT147	10/4 PRIORITY ENCODER	74147	R
CD54HCT151	8 LINE MULTIPLEXER	74151	R
CD54HCT153	DUAL 4 - INPUT MULTIPLEXER	74153	R
CD54HCT157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157	R
CD54HCT160	PRESET DECADE CTR	74160	R
CD54HCT161	PRESET BINARY CTR	74161	R
CD54HCT162	PRESET DECADE CTR (SNY CLR)	74160	R
CD54HCT163	PRESET DECADE CTR (SYN CLR)	74161	R
CD54HCT173	QUAD "D" REG (TS)	74173	R
CD54HCT174	HEX "D" F/F	74174	R
CD54HCT175	QUAD "D" F/F	74175	R
CD54HCT192	U/D DECADE CTR	74192	R
CD54HCT193	U/D BINARY CTR	74193	R
CD54HCT240	OCTAL INV BUS/LINE DRIVER	74240	R
CD54HCT241	TRI-STATE OCTAL BUS/LINE DRIVER	74241	R
CD54HCT244	TRI-STATE OCTAL DRIVER (NON-INVERTING)	74244	R
CD54HCT251	TRI-STATE MULTIPLEXER	74151	R
CD54HCT253	DUAL 4 - IN MUX (TS)	74153	R
CD54HCT257	QUAD 2 - IN MUX	74157	R
CD54HCT259	8 - BIT ADDRESSABLE LATCH	74259	R
CD54HCT266	QUAD EX - NOR GATE	74266	R
CD54HCT365	HEX BUFF (TS)	74365	R
CD54HCT366	HEX INV (TS)	74366	R
CD54HCT367	HEX BUFF (4-2) (TS)	74367	R
CD54HCT368	HEX INV (4-2) (TS)	74368	R
CD54HCT374	TRI-STATE OCTAL D FLIP FLOP	74374	R

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
AJ, AJ/883, AW/883.

DM54L42	BCD - TO - DECIMAL DECODER	7442	N
DM54L75	QUAD LATCH	7475	N

IC#	FUNCTION	ICT-101 SIGNATURE	CO
DM54L157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157	N

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
J, J/883.

DM54L03	QUAD 2 - INPUT GATE (OPEN COLLECTOR)	7400	N
DM54L26	QUAD 2 - INPUT NAND GATE (HV)	7400	N

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
J, J/883, W/883.

DM54L00	QUAD 2 - INPUT GATE	7400	N
DM54L02	QUAD 2 - INPUT NOR GATE	7402	N
DM54L04	HEX INVERTER	7404	N
DM54L05	HEX INVERTER (OPEN COLLECTOR)	7404	N
DM54L08	QUAD 2 - INPUT POSITIVE AND GATE	7408	N
DM54L09	QUAD 2 - INPUT AND GATE (OC)	7408	N
DM54L10	TRIPLE 3 - INPUT NAND GATE	7410	N
DM54L11	TRIPLE 3 - INPUT AND GATE	7411	N
DM54L20	DUAL 4 - INPUT GATE	7420	N
DM54L30	8 - INPUT GATE	7430	N
DM54L32	QUAD 2 - INPUT OR GATE	7432	N
DM54L74	DUAL D FLIP FLOP	7474	N
DM54L86	QUAD EXCULSIVE - OR GATE	7486	N
DM54L192	U/D DECADE CTR	74192	N
DM54L193	U/D BINARY CTR	74193	N

SN54L00	QUAD 2 - INPUT GATE	7400	T
SN54L02	QUAD 2 - INPUT NOR GATE	7402	T
SN54L03	QUAD 2 - INPUT GATE (OPEN COLLECTOR)	7400	T
SN54L04	HEX INVERTER	7404	T
SN54L20	DUAL 4 - INPUT GATE	7420	T
SN54L30	8 - INPUT GATE	7430	T
SN54L42	BCD - TO - DECIMAL DECODER	7442	T
SN54L74	DUAL D FLIP FLOP	7474	T
SN54L86	QUAD EXCULSIVE - OR GATE	7486	T
SN54L153	DUAL 4 - INPUT MULTIPLEXER	74153	T
SN54L154	4/16 DECODER/DEMULTIPLEXER (FSC 9311)	74154	T
SN54L157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157	T
SN54L192	U/D DECADE CTR	74192	T
SN54L193	U/D BINARY CTR	74193	T

54LS107A/BCBJC	DUAL J-K FLIP FLOP	74107	M

IC#	FUNCTION	ICT-101 SIGNATURE	CO
	THE FOLLOWING IC'S INCLUDE THIS SUFFIX: A/BEBJC.		
54LS160	PRESET DECADE CTR	74160	M
54LS161	PRESET BINARY CTR	74161	M
54LS162	PRESET DECADE CTR (SNY CLR)	74160	M
54LS163	PRESET DECADE CTR (SYN CLR)	74161	M
54LS257	QUAD 2 - IN MUX	74157	M
54LS365	HEX BUFF (TS)	74365	M
54LS366	HEX INV (TS)	74366	M
54LS367	HEX BUFF (4-2) (TS)	74367	M
54LS368	HEX INV (4-2) (TS)	74368	M
	THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: ADM, DMQB.		
54LS365	HEX BUFF (TS)	74365	F
54LS366	HEX INV (TS)	74366	F
54LS367	HEX BUFF (4-2) (TS)	74367	F
54LS368	HEX INV (4-2) (TS)	74368	F
	THE FOLLOWING IC'S INCLUDE THIS SUFFIX: BCBJC.		
54LS00	QUAD 2 - INPUT GATE	7400	M
54LS02	QUAD 2 - INPUT NOR GATE	7402	M
54LS03	QUAD 2 - INPUT GATE (OPEN COLLECTOR)	7400	M
54LS04	HEX INVERTER	7404	M
54LS05	HEX INVERTER (OPEN COLLECTOR)	7404	M
54LS08	QUAD 2 - INPUT POSITIVE AND GATE	7408	M
54LS09	QUAD 2 - INPUT AND GATE (OC)	7408	M
54LS10	TRIPLE 3 - INPUT NAND GATE	7410	M
54LS11	TRIPLE 3 - INPUT AND GATE	7411	M
54LS12	TRIPLE 3 - INPUT NAND GATE (OC)	7410	M
54LS13	DUAL SCHMITT TRIGGER	7420	M
54LS14	HEX SCHMITT TRIGGER	7404	M
54LS15	TRIPLE 3 - INPUT AND GATE (OC)	7411	M
54LS20	DUAL 4 - INPUT GATE	7420	M
54LS21	DUAL 4 - INPUT AND GATE	7421	M
54LS22	DUAL 4 - INPUT NAND GATE (OC)	7420	M
54LS26	QUAD 2 - INPUT NAND GATE (HV)	7400	M
54LS27	TRIPLE 3 - INPUT NOR GATE	7427	M
54LS28	QUAD 2 - INPUT NOR BUFFER	7402	M
54LS30	8 - INPUT GATE	7430	M
54LS32	QUAD 2 - INPUT OR GATE	7432	M
54LS33	QUAD 2 - INPUT NOR BUFFER (OC)	7402	M
54LS37	QUAD 2 - INPUT NAND BUFFER	7400	M

IC#	FUNCTION	ICT-101 SIGNATURE	CO
54LS38	QUAD 2 - INPUT NAND BUFFER (OC)	7400	M
54LS40	DUAL 4 - INPUT BUFFER	7420	M
54LS42	BCD - TO - DECIMAL DECODER	7442	M
54LS86	QUAD EXCULSIVE - OR GATE	7486	M
54LS132	QUAD SCHMITT TRIGGER	7400	M
54LS136	QUAD EX - OR GATE	7486	M
54LS266	QUAD EX - NOR GATE	74266	M

THE FOLLOWING IC'S INCLUDE THIS SUFFIX: BEBJC.

54LS138	EXP SNGL 3/8 DECODER	74138	M
54LS139	EXP DUAL 2/4 DECODER	74139	M
54LS151	8 LINE MULTIPLEXER	74151	M
54LS153	DUAL 4 - INPUT MULTIPLEXER	74153	M
54LS157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157	M
54LS173	QUAD "D" REG (TS)	74173	M
54LS174	HEX "D" F/F	74174	M
54LS175	QUAD "D" F/F	74175	M
54LS192	U/D DECADE CTR	74192	M
54LS193	U/D BINARY CTR	74193	M
54LS251	TRI-STATE MULTIPLEXER	74151	M
54LS253	DUAL 4 - IN MUX (TS)	74153	M
54LS259	8 - BIT ADDRESSABLE LATCH	74259	M
54LS240BFBJC	OCTAL INV BUS/LINE DRIVER	74240	M
54LS241BJBJC	TRI-STATE OCTAL BUS/LINE DRIVER	74241	M
54LS244BRBJC	TRI-STATE OCTAL DRIVER (NON-INVERTING)	74244	M
54LS374BRBJC	TRI-STATE OCTAL D FLIP FLOP	74374	M

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
DM, DMQB.

54LS26	QUAD 2 - INPUT NAND GATE (HV)	7400	F
54LS27	TRIPLE 3 - INPUT NOR GATE	7427	F
54LS30	8 - INPUT GATE	7430	F
54LS136	QUAD EX - OR GATE	7486	F
54LS138	EXP SNGL 3/8 DECODER	74138	F
54LS139	EXP DUAL 2/4 DECODER	74139	F
54LS151	8 LINE MULTIPLEXER	74151	F
54LS153	DUAL 4 - INPUT MULTIPLEXER	74153	F

IC#	FUNCTION	ICT-101 SIGNATURE	CO
54LS157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157	F
54LS174	HEX "D" F/F	74174	F
54LS175	QUAD "D" F/F	74175	F
54LS192	U/D DECADE CTR	74192	F
54LS193	U/D BINARY CTR	74193	F
54LS253	DUAL 4 - IN MUX (TS)	74153	F
54LS259	8 - BIT ADDRESSABLE LATCH	74259	F
54LS266	QUAD EX - NOR GATE	74266	F

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
DM, DMQB, FMQB.

54LS00	QUAD 2 - INPUT GATE	7400	F
54LS02	QUAD 2 - INPUT NOR GATE	7402	F
54LS03	QUAD 2 - INPUT GATE (OPEN COLLECTOR)	7400	F
54LS04	HEX INVERTER	7404	F
54LS05	HEX INVERTER (OPEN COLLECTOR)	7404	F
54LS08	QUAD 2 - INPUT POSITIVE AND GATE	7408	F
54LS09	QUAD 2 - INPUT AND GATE (OC)	7408	F
54LS10	TRIPLE 3 - INPUT NAND GATE	7410	F
54LS11	TRIPLE 3 - INPUT AND GATE	7411	F
54LS14	HEX SCHMITT TRIGGER	7404	F
54LS20	DUAL 4 - INPUT GATE	7420	F
54LS21	DUAL 4 - INPUT AND GATE	7421	F
54LS32	QUAD 2 - INPUT OR GATE	7432	F
54LS37	QUAD 2 - INPUT NAND BUFFER	7400	F
54LS38	QUAD 2 - INPUT NAND BUFFER (OC)	7400	F
54LS42	BCD - TO - DECIMAL DECODER	7442	F
54LS74	DUAL D FLIP FLOP	7474	F

THE FOLLOWING IC'S INCLUDE THIS SUFFIX: DMQB.

54LS15	TRIPLE 3 - INPUT AND GATE (OC)	7411	F
54LS160	PRESET DECADE CTR	74160	F
54LS161	PRESET BINARY CTR	74161	F
54LS162	PRESET DECADE CTR (SNY CLR)	74160	F
54LS163	PRESET DECADE CTR (SYN CLR)	74161	F
54LS251	TRI-STATE MULTIPLEXER	74151	F
54LS257	QUAD 2 - IN MUX	74157	F

IC#	FUNCTION	ICT-101 SIGNATURE	CO
	THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: DMQB, FMQB.		
54LS13	DUAL SCHMITT TRIGGER	7420	F
54LS33	QUAD 2 - INPUT NOR BUFFER (OC)	7402	F
54LS40	DUAL 4 - INPUT BUFFER	7420	F
	THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: AJ, J, J/883, W/883.		
DM54LS74	DUAL D FLIP FLOP	7474	N
DM54LS160	PRESET DECADE CTR	74160	N
DM54LS161	PRESET BINARY CTR	74161	N
DM54LS162	PRESET DECADE CTR (SNY CLR)	74160	N
DM54LS163	PRESET DECADE CTR (SYN CLR)	74161	N
DM54LS365	HEX BUFF (TS)	74365	N
DM54LS366	HEX INV (TS)	74366	N
DM54LS367	HEX BUFF (4-2) (TS)	74367	N
DM54LS368	HEX INV (4-2) (TS)	74368	N
	THE FOLLOWING IC INCLUDES THESE SUFFIXES: BJ, J, J/883, W/883.		
DM54LS257	QUAD 2 - IN MUX	74157	N
	THE FOLLOWING IC INCLUDES THESE SUFFIXES: F/883, J, J/883.		
DM54LS154	4/16 DECODER/DEMULTIPLEXER (FSC 9311)	75154	N
	THE FOLLOWING IC'S INCLUDE THIS SUFFIX: J.		
DM54LS240	OCTAL INV BUS/LINE DRIVER	74240	N
DM54LS241	TRI-STATE OCTAL BUS/LINE DRIVER	74241	N
DM54LS244	TRI-STATE OCTAL DRIVER (NON-INVERTING)	74244	N
DM54LS251	TRI-STATE MULTIPLEXER	74151	N
DM54LS259	8 - BIT ADDRESSABLE LATCH	74259	N
	THE FOLLOWING IC INCLUDES THESE SUFFIXES: J, J/883, N.		
DM54LS374	TRI-STATE OCTAL D FLIP FLOP	74374	N

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
J, J/883, W/883.

IC#	FUNCTION	ICT-101 SIGNATURE	CO
DM54LS00	QUAD 2 - INPUT GATE	7400	N
DM54LS02	QUAD 2 - INPUT NOR GATE	7402	N
DM54LS03	QUAD 2 - INPUT GATE (OPEN COLLECTOR)	7400	N
DM54LS04	HEX INVERTER	7404	N
DM54LS05	HEX INVERTER (OPEN COLLECTOR)	7404	N
DM54LS08	QUAD 2 - INPUT POSITIVE AND GATE	7408	N
DM54LS09	QUAD 2 - INPUT AND GATE (OC)	7408	N
DM54LS10	TRIPLE 3 - INPUT NAND GATE	7410	N
DM54LS11	TRIPLE 3 - INPUT AND GATE	7411	N
DM54LS12	TRIPLE 3 - INPUT NAND GATE (OC)	7410	N
DM54LS13	DUAL SCHMITT TRIGGER	7420	N
DM54LS14	HEX SCHMITT TRIGGER	7404	N
DM54LS15	TRIPLE 3 - INPUT AND GATE (OC)	7411	N
DM54LS20	DUAL 4 - INPUT GATE	7420	N
DM54LS21	DUAL 4 - INPUT AND GATE	7421	N
DM54LS22	DUAL 4 - INPUT NAND GATE (OC)	7420	N
DM54LS26	QUAD 2 - INPUT NAND GATE (HV)	7400	N
DM54LS27	TRIPLE 3 - INPUT NOR GATE	7427	N
DM54LS30	8 - INPUT GATE	7430	N
DM54LS32	QUAD 2 - INPUT OR GATE	7432	N
DM54LS37	QUAD 2 - INPUT NAND BUFFER	7400	N
DM54LS38	QUAD 2 - INPUT NAND BUFFER (OC)	7400	N
DM54LS40	DUAL 4 - INPUT BUFFER	7420	N
DM54LS42	BCD - TO - DECIMAL DECODER	7442	N
DM54LS48	BCD-7 SEG DECODER/DRIVER (ACTIVE HI)	7448	N
DM54LS86	QUAD EXCULSIVE - OR GATE	7486	N
DM54LS107	DUAL J-K FLIP FLOP	74107	N
DM54LS132	QUAD SCHMITT TRIGGER	7400	N
DM54LS138	EXP SNGL 3/8 DECODER	74138	N
DM54LS139	EXP DUAL 2/4 DECODER	74139	N
DM54LS151	8 LINE MULTIPLEXER	74151	N
DM54LS153	DUAL 4 - INPUT MULTIPLEXER	74153	N
DM54LS157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157	N
DM54LS173	QUAD "D" REG (TS)	74173	N
DM54LS174	HEX "D" F/F	74174	N
DM54LS175	QUAD "D" F/F	74175	N
DM54LS192	U/D DECADE CTR	74192	N
DM54LS193	U/D BINARY CTR	74193	N
DM54LS253	DUAL 4 - IN MUX (TS)	74153	N
DM54LS266	QUAD EX - NOR GATE	74266	N

IC#	FUNCTION	ICT-101 SIGNATURE	CO

THE FOLLOWING IC INCLUDES THESE SUFFIXES:
J/883, W/883.

IC#	FUNCTION	ICT-101 SIGNATURE	CO
DM54LS123	DUAL RETRIG MONO MULTIVIBRATER	74123	N

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: AF, AW.

IC#	FUNCTION	ICT-101 SIGNATURE	CO
JB54LS74	DUAL D FLIP FLOP	7474	S
JB54LS161	PRESET BINARY CTR	74161	S
JB54LS163	PRESET DECADE CTR (SYN CLR)	74161	S
JB54LS257	QUAD 2 - IN MUX	74157	S
JB54LS365	HEX BUFF (TS)	74365	S
JB54LS367	HEX BUFF (4-2) (TS)	74367	S
JB54LS368	HEX INV (4-2) (TS)	74368	S

IC#	FUNCTION	ICT-101 SIGNATURE	CO
JB54LS240F	OCTAL INV BUS/LINE DRIVER	74240	S

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: F, W.

IC#	FUNCTION	ICT-101 SIGNATURE	CO
JB54LS00	QUAD 2 - INPUT GATE	7400	S
JB54LS02	QUAD 2 - INPUT NOR GATE	7402	S
JB54LS04	HEX INVERTER	7404	S
JB54LS08	QUAD 2 - INPUT POSITIVE AND GATE	7408	S
JB54LS10	TRIPLE 3 - INPUT NAND GATE	7410	S
JB54LS14	HEX SCHMITT TRIGGER	7404	S
JB54LS20	DUAL 4 - INPUT GATE	7420	S
JB54LS32	QUAD 2 - INPUT OR GATE	7432	S
JB54LS37	QUAD 2 - INPUT NAND BUFFER	7400	S
JB54LS42	BCD - TO - DECIMAL DECODER	7442	S
JB54LS86	QUAD EXCULSIVE - OR GATE	7486	S
JB54LS107	DUAL J-K FLIP FLOP	74107	S
JB54LS132	QUAD SCHMITT TRIGGER	7400	S
JB54LS138	EXP SNGL 3/8 DECODER	74138	S
JB54LS139	EXP DUAL 2/4 DECODER	74139	S
JB54LS153	DUAL 4 - INPUT MULTIPLEXER	74153	S
JB54LS174	HEX "D" F/F	74174	S
JB54LS175	QUAD "D" F/F	74175	S
JB54LS192	U/D DECADE CTR	74192	S
JB54LS193	U/D BINARY CTR	74193	S
JB54LS266	QUAD EX - NOR GATE	74266	S

IC#	FUNCTION	ICT-101 SIGNATURE	CO
	THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: AF/883B, AW/883B.		
S54LS74	DUAL D FLIP FLOP	7474	S
S54LS160	PRESET DECADE CTR	74160	S
S54LS161	PRESET BINARY CTR	74161	S
S54LS162	PRESET DECADE CTR (SNY CLR)	74160	S
S54LS163	PRESET DECADE CTR (SYN CLR)	74161	S
S54LS257	QUAD 2 - IN MUX	74157	S
S54LS365	HEX BUFF (TS)	74365	S
S54LS366	HEX INV (TS)	74366	S
S54LS367	HEX BUFF (4-2) (TS)	74367	S
S54LS368	HEX INV (4-2) (TS)	74368	S
	THE FOLLOWING IC'S INCLUDE THIS SUFFIX: F/883B.		
S54LS240	OCTAL INV BUS/LINE DRIVER	74240	S
S54LS241	TRI-STATE OCTAL BUS/LINE DRIVER	74241	S
S54LS244	TRI-STATE OCTAL DRIVER (NON-INVERTING)	74244	S
S54LS374	TRI-STATE OCTAL D FLIP FLOP	74374	S
	THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: F/883B, W/883B.		
S54LS00	QUAD 2 - INPUT GATE	7400	S
S54LS02	QUAD 2 - INPUT NOR GATE	7402	S
S54LS04	HEX INVERTER	7404	S
S54LS08	QUAD 2 - INPUT POSITIVE AND GATE	7408	S
S54LS10	TRIPLE 3 - INPUT NAND GATE	7410	S
S54LS14	HEX SCHMITT TRIGGER	7404	S
S54LS20	DUAL 4 - INPUT GATE	7420	S
S54LS28	QUAD 2 - INPUT NOR BUFFER	7402	S
S54LS30	8 - INPUT GATE	7430	S
S54LS32	QUAD 2 - INPUT OR GATE	7432	S
S54LS37	QUAD 2 - INPUT NAND BUFFER	7400	S
S54LS42	BCD - TO - DECIMAL DECODER	7442	S
S54LS86	QUAD EXCULSIVE - OR GATE	7486	S
S54LS107	DUAL J-K FLIP FLOP	74107	S
S54LS132	QUAD SCHMITT TRIGGER	7400	S
S54LS136	QUAD EX - OR GATE	7486	S
S54LS138	EXP SNGL 3/8 DECODER	74138	S
S54LS139	EXP DUAL 2/4 DECODER	74139	S
S54LS151	8 LINE MULTIPLEXER	74151	S
S54LS153	DUAL 4 - INPUT MULTIPLEXER	74153	S
S54LS154	4/16 DECODER/DEMULTIPLEXER (FSC 9311)	75154	S

IC#	FUNCTION	ICT-101 SIGNATURE	CO
S54LS157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157	S
S54LS192	U/D DECADE CTR	74192	S
S54LS193	U/D BINARY CTR	74193	S
S54LS251	TRI-STATE MULTIPLEXER	74151	S
S54LS266	QUAD EX - NOR GATE	74266	S
SN54LS00	QUAD 2 - INPUT GATE	7400	T
SN54LS02	QUAD 2 - INPUT NOR GATE	7402	T
SN54LS03	QUAD 2 - INPUT GATE (OPEN COLLECTOR)	7400	T
SN54LS04	HEX INVERTER	7404	T
SN54LS05	HEX INVERTER (OPEN COLLECTOR)	7404	T
SN54LS08	QUAD 2 - INPUT POSITIVE AND GATE	7408	T
SN54LS09	QUAD 2 - INPUT AND GATE (OC)	7408	T
SN54LS10	TRIPLE 3 - INPUT NAND GATE	7410	T
SN54LS11	TRIPLE 3 - INPUT AND GATE	7411	T
SN54LS12	TRIPLE 3 - INPUT NAND GATE (OC)	7410	T
SN54LS13	DUAL SCHMITT TRIGGER	7420	T
SN54LS14	HEX SCHMITT TRIGGER	7404	T
SN54LS15	TRIPLE 3 - INPUT AND GATE (OC)	7411	T
SN54LS20	DUAL 4 - INPUT GATE	7420	T
SN54LS21	DUAL 4 - INPUT AND GATE	7421	T
SN54LS22	DUAL 4 - INPUT NAND GATE (OC)	7420	T
SN54LS26	QUAD 2 - INPUT NAND GATE (HV)	7400	T
SN54LS27	TRIPLE 3 - INPUT NOR GATE	7427	T
SN54LS28	QUAD 2 - INPUT NOR BUFFER	7402	T
SN54LS30	8 - INPUT GATE	7430	T
SN54LS32	QUAD 2 - INPUT OR GATE	7432	T
SN54LS33	QUAD 2 - INPUT NOR BUFFER (OC)	7402	T
SN54LS37	QUAD 2 - INPUT NAND BUFFER	7400	T
SN54LS38	QUAD 2 - INPUT NAND BUFFER (OC)	7400	T
SN54LS40	DUAL 4 - INPUT BUFFER	7420	T
SN54LS42	BCD - TO - DECIMAL DECODER	7442	T
SN54LS48	BCD-7 SEG DECODER/DRIVER (ACTIVE HI)	7448	T
SN54LS86	QUAD EXCULSIVE - OR GATE	7486	T
SN54LS132	QUAD SCHMITT TRIGGER	7400	T
SN54LS136	QUAD EX - OR GATE	7486	T
SN54LS138	EXP SNGL 3/8 DECODER	74138	T
SN54LS139	EXP DUAL 2/4 DECODER	74139	T
SN54LS145	BCD - TO - DECIMAL DECODER/DRIVER	7442	T
SN54LS147	10/4 PRIORITY ENCODER	74147	T
SN54LS151	8 LINE MULTIPLEXER	74151	T
SN54LS153	DUAL 4 - INPUT MULTIPLEXER	74153	T
SN54LS157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157	T
SN54LS174	HEX "D" F/F	74174	T
SN54LS175	QUAD "D" F/F	74175	T
SN54LS192	U/D DECADE CTR	74192	T

IC#	FUNCTION	ICT-101 SIGNATURE	CO
SN54LS193	U/D BINARY CTR	74193	T
SN54LS240	OCTAL INV BUS/LINE DRIVER	74240	T
SN54LS241	TRI-STATE OCTAL BUS/LINE DRIVER	74241	T
SN54LS244	TRI-STATE OCTAL DRIVER (NON-INVERTING)	74244	T
SN54LS251	TRI-STATE MULTIPLEXER	74151	T
SN54LS253	DUAL 4 - IN MUX (TS)	74153	T
SN54LS259	8 - BIT ADDRESSABLE LATCH	74259	T
SN54LS266	QUAD EX - NOR GATE	74266	T
SN54LS374	TRI-STATE OCTAL D FLIP FLOP	74374	T

THE FOLLOWING IC'S INCLUDE THIS SUFFIX: A.

IC#	FUNCTION	ICT-101 SIGNATURE	CO
SN54LS74	DUAL D FLIP FLOP	7474	T
SN54LS107	DUAL J-K FLIP FLOP	74107	T
SN54LS160	PRESET DECADE CTR	74160	T
SN54LS161	PRESET BINARY CTR	74161	T
SN54LS162	PRESET DECADE CTR (SNY CLR)	74160	T
SN54LS163	PRESET DECADE CTR (SYN CLR)	74161	T
SN54LS173	QUAD "D" REG (TS)	74173	T
SN54LS257	QUAD 2 - IN MUX	74157	T
SN54LS365	HEX BUFF (TS)	74365	T
SN54LS366	HEX INV (TS)	74366	T
SN54LS367	HEX BUFF (4-2) (TS)	74367	T
SN54LS368	HEX INV (4-2) (TS)	74368	T

THE FOLLOWING IC'S INCLUDE THIS SUFFIX: AJ.

IC#	FUNCTION	ICT-101 SIGNATURE	CO
SN54LS107	DUAL J-K FLIP FLOP	74107	M
SN54LS160	PRESET DECADE CTR	74160	M
SN54LS161	PRESET BINARY CTR	74161	M
SN54LS162	PRESET DECADE CTR (SNY CLR)	74160	M
SN54LS163	PRESET DECADE CTR (SYN CLR)	74161	M
SN54LS173	QUAD "D" REG (TS)	74173	M
SN54LS257	QUAD 2 - IN MUX	74157	M
SN54LS365	HEX BUFF (TS)	74365	M
SN54LS366	HEX INV (TS)	74366	M
SN54LS368	HEX INV (4-2) (TS)	74368	M

IC#	FUNCTION	ICT-101 SIGNATURE	CO
SN54LS367AJ SN54LS367J	HEX BUFF (4-2) (TS)	74367	M

THE FOLLOWING IC'S INCLUDE THIS SUFFIX: J.

IC#	FUNCTION	ICT-101 SIGNATURE	CO
SN54LS00	QUAD 2 - INPUT GATE	7400	M
SN54LS02	QUAD 2 - INPUT NOR GATE	7402	M
SN54LS03	QUAD 2 - INPUT GATE (OPEN COLLECTOR)	7400	M
SN54LS04	HEX INVERTER	7404	M
SN54LS05	HEX INVERTER (OPEN COLLECTOR)	7404	M
SN54LS08	QUAD 2 - INPUT POSITIVE AND GATE	7408	M
SN54LS10	TRIPLE 3 - INPUT NAND GATE	7410	M
SN54LS11	TRIPLE 3 - INPUT AND GATE	7411	M
SN54LS12	TRIPLE 3 - INPUT NAND GATE (OC)	7410	M
SN54LS13	DUAL SCHMITT TRIGGER	7420	M
SN54LS14	HEX SCHMITT TRIGGER	7404	M
SN54LS15	TRIPLE 3 - INPUT AND GATE (OC)	7411	M
SN54LS20	DUAL 4 - INPUT GATE	7420	M
SN54LS21	DUAL 4 - INPUT AND GATE	7421	M
SN54LS22	DUAL 4 - INPUT NAND GATE (OC)	7420	M
SN54LS26	QUAD 2 - INPUT NAND GATE (HV)	7400	M
SN54LS27	TRIPLE 3 - INPUT NOR GATE	7427	M
SN54LS28	QUAD 2 - INPUT NOR BUFFER	7402	M
SN54LS30	8 - INPUT GATE	7430	M
SN54LS32	QUAD 2 - INPUT OR GATE	7432	M
SN54LS33	QUAD 2 - INPUT NOR BUFFER (OC)	7402	M
SN54LS37	QUAD 2 - INPUT NAND BUFFER	7400	M
SN54LS38	QUAD 2 - INPUT NAND BUFFER (OC)	7400	M
SN54LS40	DUAL 4 - INPUT BUFFER	7420	M
SN54LS42	BCD - TO - DECIMAL DECODER	7442	M
SN54LS86	QUAD EXCLUSIVE - OR GATE	7486	M
SN54LS132	QUAD SCHMITT TRIGGER	7400	M
SN54LS136	QUAD EX - OR GATE	7486	M
SN54LS138	EXP SNGL 3/8 DECODER	74138	M
SN54LS139	EXP DUAL 2/4 DECODER	74139	M
SN54LS151	8 LINE MULTIPLEXER	74151	M
SN54LS153	DUAL 4 - INPUT MULTIPLEXER	74153	M
SN54LS157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157	M
SN54LS174	HEX "D" F/F	74174	M
SN54LS175	QUAD "D" F/F	74175	M
SN54LS192	U/D DECADE CTR	74192	M
SN54LS193	U/D BINARY CTR	74193	M
SN54LS240	OCTAL INV BUS/LINE DRIVER	74240	M
SN54LS241	TRI-STATE OCTAL BUS/LINE DRIVER	74241	M
SN54LS244	TRI-STATE OCTAL DRIVER (NON-INVERTING)	74244	M
SN54LS251	TRI-STATE MULTIPLEXER	74151	M
SN54LS253	DUAL 4 - IN MUX (TS)	74153	M
SN54LS259	8 - BIT ADDRESSABLE LATCH	74259	M
SN54LS266	QUAD EX - NOR GATE	74266	M
SN54LS374	TRI-STATE OCTAL D FLIP FLOP	74374	M

IC#	FUNCTION	ICT-101 SIGNATURE	CO
	THE FOLLOWING IC INCLUDES THESE SUFFIXES: DM, DMQB.		
54S20	DUAL 4 - INPUT GATE	7420	F
	THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: DM, DMQB, FMQB.		
54S00	QUAD 2 - INPUT GATE	7400	F
54S02	QUAD 2 - INPUT NOR GATE	7402	F
54S08	QUAD 2 - INPUT POSITIVE AND GATE	7408	F
54S10	TRIPLE 3 - INPUT NAND GATE	7410	F
54S11	TRIPLE 3 - INPUT AND GATE	7411	F
54S22	DUAL 4 - INPUT NAND GATE (OC)	7420	F
54S30	8 - INPUT GATE	7430	F
54S32	QUAD 2 - INPUT OR GATE	7432	F
54S40	DUAL 4 - INPUT BUFFER	7420	F
54S74	DUAL D FLIP FLOP	7474	F
54S86	QUAD EXCULSIVE - OR GATE	7486	F
54S132	QUAD SCHMITT TRIGGER	7400	F
54S138	EXP SNGL 3/8 DECODER	74138	F
54S139	EXP DUAL 2/4 DECODER	74139	F
54S140	DUAL 4 - INPUT NAND DRIVER	7420	F
54S151	8 LINE MULTIPLEXER	74151	F
54S153	DUAL 4 - INPUT MULTIPLEXER	74153	F
54S157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157	F
54S174	HEX "D" F/F	74174	F
54S175	QUAD "D" F/F	74175	F
54S253	DUAL 4 - IN MUX (TS)	74153	F
54S15DMQB	TRIPLE 3 - INPUT AND GATE (OC)	7411	F
	THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: DMQB, FMQB.		
54S04	HEX INVERTER	7404	F
54S05	HEX INVERTER (OPEN COLLECTOR)	7404	F
54S09	QUAD 2 - INPUT AND GATE (OC)	7408	F
54S257	QUAD 2 - IN MUX	74157	F
DM54S22J	DUAL 4 - INPUT NAND GATE (OC)	7420	N

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
J, J/883.

IC#	FUNCTION	ICT-101 SIGNATURE	CO
DM54S00	QUAD 2 - INPUT GATE	7400	N
DM54S02	QUAD 2 - INPUT NOR GATE	7402	N
DM54S03	QUAD 2 - INPUT GATE (OPEN COLLECTOR)	7400	N
DM54S04	HEX INVERTER	7404	N
DM54S05	HEX INVERTER (OPEN COLLECTOR)	7404	N
DM54S08	QUAD 2 - INPUT POSITIVE AND GATE	7408	N
DM54S09	QUAD 2 - INPUT AND GATE (OC)	7408	N
DM54S10	TRIPLE 3 - INPUT NAND GATE	7410	N
DM54S11	TRIPLE 3 - INPUT AND GATE	7411	N
DM54S15	TRIPLE 3 - INPUT AND GATE (OC)	7411	N
DM54S20	DUAL 4 - INPUT GATE	7420	N
DM54S30	8 - INPUT GATE	7430	N
DM54S32	QUAD 2 - INPUT OR GATE	7432	N
DM54S40	DUAL 4 - INPUT BUFFER	7420	N
DM54S74	DUAL D FLIP FLOP	7474	N
DM54S86	QUAD EXCULSIVE - OR GATE	7486	N
DM54S136	QUAD EX - OR GATE	7486	N
DM54S138	EXP SNGL 3/8 DECODER	74138	N
DM54S139	EXP DUAL 2/4 DECODER	74139	N
DM54S140	DUAL 4 - INPUT NAND DRIVER	7420	N
DM54S151	8 LINE MULTIPLEXER	74151	N
DM54S153	DUAL 4 - INPUT MULTIPLEXER	74153	N
DM54S157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157	N
DM54S160	PRESET DECADE CTR	74160	N
DM54S161	PRESET BINARY CTR	74161	N
DM54S162	PRESET DECADE CTR (SNY CLR)	74160	N
DM54S163	PRESET DECADE CTR (SYN CLR)	74161	N
DM54S174	HEX "D" F/F	74174	N
DM54S175	QUAD "D" F/F	74175	N
DM54S240	OCTAL INV BUS/LINE DRIVER	74240	N
DM54S241	TRI-STATE OCTAL BUS/LINE DRIVER	74241	N
DM54S244	TRI-STATE OCTAL DRIVER (NON-INVERTING)	74244	N
DM54S251	TRI-STATE MULTIPLEXER	74151	N
DM54S253	DUAL 4 - IN MUX (TS)	74153	N
DM54S257	QUAD 2 - IN MUX	74157	N
DM54S374	TRI-STATE OCTAL D FLIP FLOP	74374	N

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: F, W.

JB54S00	QUAD 2 - INPUT GATE	7400	S
JB54S02	QUAD 2 - INPUT NOR GATE	7402	S
JB54S04	HEX INVERTER	7404	S
JB54S08	QUAD 2 - INPUT POSITIVE AND GATE	7408	S

IC#	FUNCTION	ICT-101 SIGNATURE	CO
JB54S10	TRIPLE 3 - INPUT NAND GATE	7410	S
JB54S11	TRIPLE 3 - INPUT AND GATE	7411	S
JB54S40	DUAL 4 - INPUT BUFFER	7420	S
JB54S74	DUAL D FLIP FLOP	7474	S
JB54S86	QUAD EXCLUSIVE - OR GATE	7486	S
JB54S140	DUAL 4 - INPUT NAND DRIVER	7420	S
JB54S151	8 LINE MULTIPLEXER	74151	S
JB54S153	DUAL 4 - INPUT MULTIPLEXER	74153	S
JB54S157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157	S

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
F/883B, W/883B.

IC#	FUNCTION	ICT-101 SIGNATURE	CO
S54S00	QUAD 2 - INPUT GATE	7400	S
S54S02	QUAD 2 - INPUT NOR GATE	7402	S
S54S04	HEX INVERTER	7404	S
S54S08	QUAD 2 - INPUT POSITIVE AND GATE	7408	S
S54S10	TRIPLE 3 - INPUT NAND GATE	7410	S
S54S11	TRIPLE 3 - INPUT AND GATE	7411	S
S54S20	DUAL 4 - INPUT GATE	7420	S
S54S40	DUAL 4 - INPUT BUFFER	7420	S
S54S74	DUAL D FLIP FLOP	7474	S
S54S86	QUAD EXCLUSIVE - OR GATE	7486	S
S54S138	EXP SNGL 3/8 DECODER	74138	S
S54S139	EXP DUAL 2/4 DECODER	74139	S
S54S140	DUAL 4 - INPUT NAND DRIVER	7420	S
S54S151	8 LINE MULTIPLEXER	74151	S
S54S153	DUAL 4 - INPUT MULTIPLEXER	74153	S
S54S157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157	S
S54S174	HEX "D" F/F	74174	S
S54S251	TRI-STATE MULTIPLEXER	74151	S
S54S253	DUAL 4 - IN MUX (TS)	74153	S
SN54S00	QUAD 2 - INPUT GATE	7400	T
SN54S02	QUAD 2 - INPUT NOR GATE	7402	T
SN54S03	QUAD 2 - INPUT GATE (OPEN COLLECTOR)	7400	T
SN54S04	HEX INVERTER	7404	T
SN54S05	HEX INVERTER (OPEN COLLECTOR)	7404	T
SN54S08	QUAD 2 - INPUT POSITIVE AND GATE	7408	T
SN54S09	QUAD 2 - INPUT AND GATE (OC)	7408	T
SN54S10	TRIPLE 3 - INPUT NAND GATE	7410	T
SN54S11	TRIPLE 3 - INPUT AND GATE	7411	T
SN54S15	TRIPLE 3 - INPUT AND GATE (OC)	7411	T
SN54S20	DUAL 4 - INPUT GATE	7420	T
SN54S22	DUAL 4 - INPUT NAND GATE (OC)	7420	T

IC#	FUNCTION	ICT-101 SIGNATURE	CO
SN54S30	8 - INPUT GATE	7430	T
SN54S32	QUAD 2 - INPUT OR GATE	7432	T
SN54S37	QUAD 2 - INPUT NAND BUFFER	7400	T
SN54S38	QUAD 2 - INPUT NAND BUFFER (OC)	7400	T
SN54S40	DUAL 4 - INPUT BUFFER	7420	T
SN54S74	DUAL D FLIP FLOP	7474	T
SN54S86	QUAD EXCLUSIVE - OR GATE	7486	T
SN54S132	QUAD SCHMITT TRIGGER	7400	T
SN54S138	EXP SNGL 3/8 DECODER	74138	T
SN54S139	EXP DUAL 2/4 DECODER	74139	T
SN54S140	DUAL 4 - INPUT NAND DRIVER	7420	T
SN54S151	8 LINE MULTIPLEXER	74151	T
SN54S153	DUAL 4 - INPUT MULTIPLEXER	74153	T
SN54S157	QUAD 2 - INPUT MULTIPLEXER (9322)	74157	T
SN54S162	PRESET DECADE CTR (SNY CLR)	74160	T
SN54S163	PRESET DECADE CTR (SYN CLR)	74161	T
SN54S174	HEX "D" F/F	74174	T
SN54S175	QUAD "D" F/F	74175	T
SN54S240	OCTAL INV BUS/LINE DRIVER	74240	T
SN54S241	TRI-STATE OCTAL BUS/LINE DRIVER	74241	T
SN54S251	TRI-STATE MULTIPLEXER	74151	T
SN54S257	QUAD 2 - IN MUX	74157	T
SN54S374	TRI-STATE OCTAL D FLIP FLOP	74374	T

THE FOLLOWING IC'S INCLUDE THIS SUFFIX: J.

MM54C174	HEX D FLIP FLOP	74C174	N
MM54C240	TRI-STATE OCTAL BUFFERS	74C240	N

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
J, J/883.

MM54C32	QUAD 2 - INPUT OR GATE	74C32	N
MM54C107	DUAL J-K FLIP FLOP	74C107	N
MM54C154	4 LINE TO 16 LINE DECODER	74C154	N
MM54C244	TRI-STATE OCTAL BUFFER	74C244	N
MM54C374	TRI-STATE OCTAL D FLIP FLOP	74C374	N

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
J, J/883, W/883.

MM54C00	QUAD 2 - INPUT NAND GATE	74C00	N
MM54C02	QUAD 2 - INPUT NOR GATE	74C02	N
MM54C04	HEX INVERTER	74C04	N

IC#	FUNCTION	ICT-101 SIGNATURE	CO
MM54C08	QUAD 2 - INPUT AND GATE	74C08	N
MM54C10	TRIPLE 3 - INPUT NAND GATE	74C10	N
MM54C20	DUAL 4 - INPUT NAND GATE	74C20	N
MM54C30	8 - INPUT AND GATE	74C30	N
MM54C42	BCD - TO - DECIMAL DECODER	74C42	N
MM54C48	BCD - TO - 7 SEGMENT DECODER DRIVER	74C48	N
MM54C73	DUAL J-K FLIP FLOP	74C48	N
MM54C74	DUAL D FLIP FLOP	74C74	N
MM54C86	QUAD EXCLUSIVE OR GATE	4030	N
MM54C151	8 - CHANNEL DIGITAL MULTIPLEXER	74C151	N
MM54C157	QUAD 2 - INPUT MULTIPLEXER	74C157	N
MM54C160	SYNCHRONOUS DECADE COUNTER	74C160	N
MM54C161	SYNCHRONOUS BINARY COUNTER	74C161	N
MM54C162	FULLY SYNCHRONOUS DECADE COUNTER	74C160	N
MM54C163	FULLY SYNCHRONOUS BINARY COUNTER	74C161	N
MM54C173	TRI-STATE QUAD LATCH	74C173	N
MM54C175	QUAD D FLIP FLOP	74C175	N
MM54C192	DECADE UP/DOWN COUNTER	74C192	N
MM54C193	BINARY UP/DOWN COUNTER	74C193	N
MM54C221	DUAL MONOSTABLE MULTIVIBRATER (SCH TRG)	74C123	N
MM54C901	HEX INVERTING BUFFER (TTL INTERFACE)	74C04	N

THE FOLLOWING IC'S INCLUDE THIS SUFFIX: BCAJC.

54HC00	QUAD 2 - INPUT NAND GATE	74C00	M
54HC02	QUAD 2 - INPUT NOR GATE	74C02	M
54HC10	TRIPLE 3 - INPUT NAND GATE	74C10	M
54HC20	DUAL 4 - INPUT NAND GATE	74C20	M
54HC74	DUAL D FLIP FLOP	74C74	M
54HC86	QUAD EXCLUSIVE OR GATE	4030	M
54HC123	DUAL M/M	74C123	M
54HC266	QUAD EX - NOR GATE	74C266	M
54HC374	TRI-STATE OCTAL D FLIP FLOP	74C374	M

THE FOLLOWING IC'S INCLUDE THIS SUFFIX: BEAJC.

54HC42	BCD - TO - DECIMAL DECODER	74C42	M
54HC138	3 - TO - 8 LINE DECODER	74C138	M
54HC157	QUAD 2 - INPUT MULTIPLEXER	74C157	M
54HC160	SYNCHRONOUS DECADE COUNTER	74C160	M
54HC161	SYNCHRONOUS BINARY COUNTER	74C161	M
54HC173	TRI-STATE QUAD LATCH	74C173	M
54HC175	QUAD D FLIP FLOP	74C175	M
54HC257	QUAD 2 - IN MUX	74C157	M

IC#	FUNCTION	ICT-101 SIGNATURE	CO
	THE FOLLOWING IC'S INCLUDE THIS SUFFIX: BRAJC.		
54HC240	TRI-STATE OCTAL BUFFERS	74C240	M
54HC241	OCTAL BUFFER	74C241	M
54HC244	TRI-STATE OCTAL BUFFER	74C244	M
	THE FOLLOWING IC'S INCLUDE THIS SUFFIX: F.		
CD54HC00	QUAD 2 - INPUT NAND GATE	74C00	R
CD54HC02	QUAD 2 - INPUT NOR GATE	74C02	R
CD54HC04	HEX INVERTER	74C04	R
CD54HC08	QUAD 2 - INPUT AND GATE	74C08	R
CD54HC10	TRIPLE 3 - INPUT NAND GATE	74C10	R
CD54HC11	3 - INPUT NAND GATE	74C11	R
CD54HC20	DUAL 4 - INPUT NAND GATE	74C20	R
CD54HC27	TRIPLE 3 - INPUT NOR GATE	74C27	R
CD54HC30	8 - INPUT AND GATE	74C30	R
CD54HC32	QUAD 2 - INPUT OR GATE	74C32	R
CD54HC42	BCD - TO - DECIMAL DECODER	74C42	R
CD54HC74	DUAL D FLIP FLOP	74C74	R
CD54HC86	QUAD EXCLUSIVE OR GATE	4030	R
CD54HC107	DUAL J-K FLIP FLOP	74C107	R
CD54HC138	3 - TO - 8 LINE DECODER	74C138	R
CD54HC139	DUAL 2 - TO - 4 LINE DECODER	74C139	R
CD54HC147	10 TO 4 LINE ENCODER	74C147	R
CD54HC151	8 - CHANNEL DIGITAL MULTIPLEXER	74C151	R
CD54HC153	DUAL 4 - INPUT MULTIPLEXER	74C153	R
CD54HC157	QUAD 2 - INPUT MULTIPLEXER	74C157	R
CD54HC160	SYNCHRONOUS DECADE COUNTER	74C160	R
CD54HC161	SYNCHRONOUS BINARY COUNTER	74C161	R
CD54HC162	FULLY SYNCHRONOUS DECADE COUNTER	74C160	R
CD54HC163	FULLY SYNCHRONOUS BINARY COUNTER	74C161	R
CD54HC173	TRI-STATE QUAD LATCH	74C173	R
CD54HC174	HEX D FLIP FLOP	74C174	R
CD54HC175	QUAD D FLIP FLOP	74C175	R
CD54HC192	DECADE UP/DOWN COUNTER	74C192	R
CD54HC193	BINARY UP/DOWN COUNTER	74C193	R
CD54HC240	TRI-STATE OCTAL BUFFERS	74C240	R
CD54HC241	OCTAL BUFFER	74C241	R
CD54HC244	TRI-STATE OCTAL BUFFER	74C244	R
CD54HC251	8 - CHANNEL TRI-STATE MULTIPLEXER	74C151	R
CD54HC253	DUAL 4 - IN MUX (TS)	74C153	R
CD54HC257	QUAD 2 - IN MUX	74C157	R
CD54HC259	8 - BIT ADDRESSABLE LATCH	74C259	R
CD54HC266	QUAD EX - NOR GATE	74C266	R
CD54HC365	HEX BUFF (TS)	74C365	R

IC#	FUNCTION	ICT-101 SIGNATURE	CO
CD54HC366	HEX INV (TS)	74C366	R
CD54HC367	HEX BUFF (4-2) (TS)	74C367	R
CD54HC368	HEX INV (4-2) (TS)	74C368	R
CD54HC374	TRI-STATE OCTAL D FLIP FLOP	74C374	R

THE FOLLOWING IC'S INCLUDE THESE SUFFIXES:
J, JD, JDS, JS.

MC54HC00	QUAD 2 - INPUT NAND GATE	74C00	M
MC54HC02	QUAD 2 - INPUT NOR GATE	74C02	M
MC54HC08	QUAD 2 - INPUT AND GATE	74C08	M
MC54HC10	TRIPLE 3 - INPUT NAND GATE	74C10	M
MC54HC20	DUAL 4 - INPUT NAND GATE	74C20	M
MC54HC27	TRIPLE 3 - INPUT NOR GATE	74C27	M
MC54HC42	BCD - TO - DECIMAL DECODER	74C42	M
MC54HC74	DUAL D FLIP FLOP	74C74	M
MC54HC86	QUAD EXCLUSIVE OR GATE	4030	M
MC54HC107	DUAL J-K FLIP FLOP	74C107	M
MC54HC138	3 - TO - 8 LINE DECODER	74C138	M
MC54HC139	DUAL 2 - TO - 4 LINE DECODER	74C139	M
MC54HC151	8 - CHANNEL DIGITAL MULTIPLEXER	74C151	M
MC54HC153	DUAL 4 - INPUT MULTIPLEXER	74C153	M
MC54HC157	QUAD 2 - INPUT MULTIPLEXER	74C157	M
MC54HC160	SYNCHRONOUS DECADE COUNTER	74C160	M
MC54HC161	SYNCHRONOUS BINARY COUNTER	74C161	M
MC54HC162	FULLY SYNCHRONOUS DECADE COUNTER	74C160	M
MC54HC163	FULLY SYNCHRONOUS BINARY COUNTER	74C161	M
MC54HC173	TRI-STATE QUAD LATCH	74C173	M
MC54HC174	HEX D FLIP FLOP	74C174	M
MC54HC175	QUAD D FLIP FLOP	74C175	M
MC54HC240	TRI-STATE OCTAL BUFFERS	74C240	M
MC54HC241	OCTAL BUFFER	74C241	M
MC54HC244	TRI-STATE OCTAL BUFFER	74C244	M
MC54HC251	8 - CHANNEL TRI-STATE MULTIPLEXER	74C151	M
MC54HC253	DUAL 4 - IN MUX (TS)	74C153	M
MC54HC257	QUAD 2 - IN MUX	74C157	M
MC54HC266	QUAD EX - NOR GATE	74C266	M
MC54HC374	TRI-STATE OCTAL D FLIP FLOP	74C374	M

THE FOLLOWING IC'S INCLUDE THIS SUFFIX: J.

MM54HC00	QUAD 2 - INPUT NAND GATE	74C00	N
MM54HC02	QUAD 2 - INPUT NOR GATE	74C02	N
MM54HC04	HEX INVERTER	74C04	N
MM54HC08	QUAD 2 - INPUT AND GATE	74C08	N

IC#	FUNCTION	ICT-101 SIGNATURE	CO
MM54HC10	TRIPLE 3 - INPUT NAND GATE	74C10	N
MM54HC11	3 - INPUT AND GATE	74C11	N
MM54HC20	DUAL 4 - INPUT NAND GATE	74C20	N
MM54HC27	TRIPLE 3 - INPUT NOR GATE	74C27	N
MM54HC30	8 - INPUT AND GATE	74C30	N
MM54HC32	QUAD 2 - INPUT OR GATE	74C32	N
MM54HC42	BCD - TO - DECIMAL DECODER	74C42	N
MM54HC73	DUAL J-K FLIP FLOP	74C48	N
MM54HC74	DUAL D FLIP FLOP	74C74	N
MM54HC86	QUAD EXCLUSIVE OR GATE	4030	N
MM54HC107	DUAL J-K FLIP FLOP	74C107	N
MM54HC138	3 - TO - 8 LINE DECODER	74C138	N
MM54HC139	DUAL 2 - TO - 4 LINE DECODER	74C139	N
MM54HC147	10 TO 4 LINE ENCODER	74C147	N
MM54HC151	8 - CHANNEL DIGITAL MULTIPLEXER	74C151	N
MM54HC153	DUAL 4 - INPUT MULTIPLEXER	74C153	N
MM54HC154	4 LINE TO 16 LINE DECODER	74C154	N
MM54HC157	QUAD 2 - INPUT MULTIPLEXER	74C157	N
MM54HC160	SYNCHRONOUS DECADE COUNTER	74C160	N
MM54HC161	SYNCHRONOUS BINARY COUNTER	74C161	N
MM54HC162	FULLY SYNCHRONOUS DECADE COUNTER	74C160	N
MM54HC163	FULLY SYNCHRONOUS BINARY COUNTER	74C161	N
MM54HC174	HEX D FLIP FLOP	74C174	N
MM54HC175	QUAD D FLIP FLOP	74C175	N
MM54HC240	TRI-STATE OCTAL BUFFERS	74C240	N
MM54HC241	OCTAL BUFFER	74C241	N
MM54HC244	TRI-STATE OCTAL BUFFER	74C244	N
MM54HC251	8 - CHANNEL TRI-STATE MULTIPLEXER	74C151	N
MM54HC253	DUAL 4 - IN MUX (TS)	74C153	N
MM54HC257	QUAD 2 - IN MUX	74C157	N
MM54HC266	QUAD EX - NOR GATE	74C266	N
MM54HC365	HEX BUFF (TS)	74C365	N
MM54HC366	HEX INV (TS)	74C366	N
MM54HC367	HEX BUFF (4-2) (TS)	74C367	N
MM54HC368	HEX INV (4-2) (TS)	74C368	N
MM54HC374	TRI-STATE OCTAL D FLIP FLOP	74C374	N
SN54HC00	QUAD 2 - INPUT NAND GATE	74C00	T
SN54HC02	QUAD 2 - INPUT NOR GATE	74C02	T
SN54HC04	HEX INVERTER	74C04	T
SN54HC08	QUAD 2 - INPUT AND GATE	74C08	T
SN54HC10	TRIPLE 3 - INPUT NAND GATE	74C10	T
SN54HC11	3 - INPUT AND GATE	74C11	T
SN54HC20	DUAL 4 - INPUT NAND GATE	74C20	T
SN54HC21	DUAL 4 - INPUT AND GATE	74C21	T
SN54HC27	TRIPLE 3 - INPUT NOR GATE	74C27	T

IC#	FUNCTION	ICT-101 SIGNATURE	CO
SN54HC30	8 - INPUT AND GATE	74C30	T
SN54HC32	QUAD 2 - INPUT OR GATE	74C32	T
SN54HC42	BCD - TO - DECIMAL DECODER	74C42	T
SN54HC73	DUAL J-K FLIP FLOP	74C48	T
SN54HC74	DUAL D FLIP FLOP	74C74	T
SN54HC86	QUAD EXCLUSIVE OR GATE	4030	T
SN54HC107	DUAL J-K FLIP FLOP	74C107	T
SN54HC138	3 - TO - 8 LINE DECODER	74C138	T
SN54HC139	DUAL 2 - TO - 4 LINE.DECODER	74C139	T
SN54HC147	10 TO 4 LINE ENCODER	74C147	T
SN54HC151	8 - CHANNEL DIGITAL MULTIPLEXER	74C151	T
SN54HC153	DUAL 4 - INPUT MULTIPLEXER	74C153	T
SN54HC154	4 LINE TO 16 LINE DECODER	74C154	T
SN54HC157	QUAD 2 - INPUT MULTIPLEXER	74C157	T
SN54HC160	SYNCHRONOUS DECADE COUNTER	74C160	T
SN54HC161	SYNCHRONOUS BINARY COUNTER	74C161	T
SN54HC162	FULLY SYNCHRONOUS DECADE COUNTER	74C160	T
SN54HC163	FULLY SYNCHRONOUS BINARY COUNTER	74C161	T
SN54HC173	TRI-STATE QUAD LATCH	74C173	T
SN54HC174	HEX D FLIP FLOP	74C174	T
SN54HC175	QUAD D FLIP FLOP	74C175	T
SN54HC192	DECADE UP/DOWN COUNTER	74C192	T
SN54HC193	BINARY UP/DOWN COUNTER	74C193	T
SN54HC240	TRI-STATE OCTAL BUFFERS	74C240	T
SN54HC241	OCTAL BUFFER	74C241	T
SN54HC244	TRI-STATE OCTAL BUFFER	74C244	T
SN54HC251	8 - CHANNEL TRI-STATE MULTIPLEXER	74C151	T
SN54HC253	DUAL 4 - IN MUX (TS)	74C153	T
SN54HC257	QUAD 2 - IN MUX	74C157	T
SN54HC259	8 - BIT ADDRESSABLE LATCH	74C259	T
SN54HC266	QUAD EX - NOR GATE	74C266	T
SN54HC365	HEX BUFF (TS)	74C365	T
SN54HC366	HEX INV (TS)	74C366	T
SN54HC367	HEX BUFF (4-2) (TS)	74C367	T
SN54HC368	HEX INV (4-2) (TS)	74C368	T
SN54HC374	TRI-STATE OCTAL D FLIP FLOP	74C374	T

THE FOLLOWING IC'S INCLUDE THIS SUFFIX: J.

MM54PC00	QUAD 2 - INPUT NAND GATE	74C00	N
MM54PC02	QUAD 2 - INPUT NOR GATE	74C02	N
MM54PC04	HEX INVERTER	74C04	N
MM54PC08	QUAD 2 - INPUT AND GATE	74C08	N
MM54PC32	QUAD 2 - INPUT OR GATE	74C32	N
MM54PC74	DUAL D FLIP FLOP	74C74	N
MM54PC138	3 - TO - 8 LINE DECODER	74C138	N

IC#	FUNCTION	ICT-101 SIGNATURE	CO
	THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: BMJ/883, BMW/883.		
CD4020	14 - STAGE RIPPLE - CARRY BINARY COUNTER	4020	N
CD4022	DIVIDE BY 8 COUNTER/DIVIDER	4022	N
CD4024	7 BIT BINARY COUNTER	4024	N
CD4070	QUAD EXCLUSIVE OR GATE	4030	N
CD4071	BUFFERED QUAD 2 - INPUT OR GATE	4071	N
CD4072	BUFFERED DUAL 4 - INPUT OR GATE	4072	N
CD4073	TRIPLE 3 - INPUT AND GATE	4073	N
CD4075	TRIPLE 3 - INPUT OR GATE	4075	N
CD4081	BUFFERED QUAD 2 - INPUT AND GATE	4081	N
CD4093	QUAD 2 - INPUT NAND SCHMITT TRIGGER	4081	N
CD40174	HEX D FLIP FLOP	74C174	N
CD40175	QUAD D FLIP FLOP	74C175	N
CD40192	DECADE UP/DOWN COUNTER	74C192	N
CD40193	BINARY UP/DOWN COUNTER	74C193	N
	THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: BMJ/883, BMW/883, MJ/883, MW/883.		
CD4001	BUFFERED QUAD 2 - INPUT NOR GATE	4001	N
CD4002	BUFFERED DUAL 4 - INPUT NOR GATE	4002	N
CD4011	BUFFERED QUAD 2 - INPUT NAND GATE	4011	N
CD4012	BUFFERED DUAL 4 - INPUT NAND GATE	4012	N
CD4013	DUAL D FLIP FLOP	4013	N
CD4017	DECADE COUNTER/DIVIDER	4017	N
CD4023	BUFFERED TRIPLE 3 - INPUT NAND GATE	4023	N
CD4025	BUFFERED TRIPLE 3 - INPUT NOR GATE	4025	N
CD4040	12 - BIT BINARY RIPPLE COUNTER	4040	N
CD4052	DIFFERENTIAL 4 - CHANNEL MULTIPLEXER	4052	N
CD4511	BCD - TO - 7 SEGMENT DECODER DRIVER	74C48	N
	THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: BMJ/883, BMW/883, MW/883.		
CD4028	BCD - TO - DECIMAL DECODER	4028	N
CD4051	SINGLE 8 - CHANNEL MULTIPLEXER	4051	N
CD4503	TRI-STATE HEX BUFFER	74C367	N
CD4528BMW/883	DUAL MONOSTABLE MULTIVIBRATER	4528	N

IC#	FUNCTION	ICT-101 SIGNATURE	CO
	THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: MJ/883, MW/883.		
CD4030	QUAD EX - OR GATE	4030	N
CD4069	HEX INVERTER	74C04	N
54HC4002	BUFFERED DUAL 4 - INPUT NOR GATE	4002	T
54HC4017	DECADE COUNTER/DIVIDER	4017	T
54HC4020	14 - STAGE RIPPLE - CARRY BINARY COUNTER	4020	T
54HC4040	12 - BIT BINARY RIPPLE COUNTER	4040	T
54HC4075	TRIPLE 3 - INPUT OR GATE	4075	T
54HC4511	BCD - TO - 7 SEGMENT DECODER DRIVER	74C48	T
	THE FOLLOWING IC'S INCLUDE THIS SUFFIX: BCAJC.		
54HC4002	BUFFERED DUAL 4 - INPUT NOR GATE	4002	M
54HC4075	TRIPLE 3 - INPUT OR GATE	4075	M
	THE FOLLOWING IC'S INCLUDE THIS SUFFIX: BEAJC.		
54HC4020	14 - STAGE RIPPLE - CARRY BINARY COUNTER	4020	M
54HC4040	12 - BIT BINARY RIPPLE COUNTER	4040	M
54HC4511	BCD - TO - 7 SEGMENT DECODER DRIVER	74C48	M
54HC4543	BCD - TO -7 SEGMENT DECODER (LCD)	74C48	M
	THE FOLLOWING IC'S INCLUDE THIS SUFFIX: F.		
CD54HCT4002	BUFFERED DUAL 4 - INPUT NOR GATE	4002	R
CD54HCT4017	DECADE COUNTER/DIVIDER	4017	R
CD54HCT4020	14 - STAGE RIPPLE - CARRY BINARY COUNTER	4020	R
CD54HCT4024	7 BIT BINARY COUNTER	4024	R
CD54HCT4040	12 - BIT BINARY RIPPLE COUNTER	4040	R
CD54HCT4052	DIFFERENTIAL 4 - CHANNEL MULTIPLEXER	4052	R
CD54HCT4511	BCD - TO - 7 SEGMENT DECODER DRIVER	74C48	R
	THE FOLLOWING IC'S INCLUDE THESE SUFFIXES: J, JD, JDS, JS.		
MC54HC4002	BUFFERED DUAL 4 - INPUT NOR GATE	4002	M
MC54HC4017	DECADE COUNTER/DIVIDER	4017	M
MC54HC4020	14 - STAGE RIPPLE - CARRY BINARY COUNTER	4020	M
MC54HC4024	7 BIT BINARY COUNTER	4024	M

IC#	FUNCTION	ICT-101 SIGNATURE	CO
MC54HC4040	12 - BIT BINARY RIPPLE COUNTER	4040	M
MC54HC4075	TRIPLE 3 - INPUT OR GATE	4075	M
MC54HC4511	BCD - TO - 7 SEGMENT DECODER DRIVER	74C48	M
MC54HC4543	BCD - TO -7 SEGMENT DECODER (LCD)	74C48	M

THE FOLLOWING IC'S INCLUDE THIS SUFFIX: J.

IC#	FUNCTION	ICT-101 SIGNATURE	CO
MM54HC4002	BUFFERED DUAL 4 - INPUT NOR GATE	4002	N
MM54HC4020	14 - STAGE RIPPLE - CARRY BINARY COUNTER	4020	N
MM54HC4040	12 - BIT BINARY RIPPLE COUNTER	4040	N
MM54HC4075	TRIPLE 3 - INPUT OR GATE	4075	N
MM54HC4543	BCD - TO -7 SEGMENT DECODER (LCD)	74C48	N

ICT-101

MODE

CONDITIONS

****

MSI MICRO
SCIENCES, INC
DALLAS, TEXAS
1-800-527-7141

```
GENERIC IC NUMBER 4013
================== ****
```

```
        V
        |
    ____|____
   |   14    |
   |         |
 --|6       2|--
 --|5       1|--
 --|3       4|--
   |         |
 --|8      12|--
 --|9      13|--
 --|11     10|--
   |         |
   |___7_____|
        |
        |
        G

       MODE 1
      =========
  VCC    14
------------------
 GROUND  7
------------------
```

```
        V
        |
    ____|____
   |   14    |
   |         |
 --|6       2|--
V--|5       1|--
 --|3       4|--G
   |         |
 --|8      12|--
V--|9      13|--
 --|11     10|--G
   |         |
   |___7_____|
        |
        |
        G

      MODE 2
     =========
     5-9-14
     ---------
     4-7-10
     ---------
```

```
        V
        |
    ____|____
   |   14    |
   |         |
 --|6       2|--
V--|5       1|--
 --|3       4|--G
   |         |
G--|8      12|--
 --|9      13|--
 --|11     10|--G
   |         |
   |___7_____|
        |
        |
        G

      MODE 3
     =========
     5-14
     ---------
     4-7-8-10
     ---------
```

```
        V
        |
    ____|____
   |   14    |
   |         |
 --|6       2|--
V--|5       1|--
 --|3       4|--G
   |         |
G--|8      12|--
G--|9      13|--
 --|11     10|--
   |         |
   |___7_____|
        |
        |
        G

       MODE 4
      =========
  VCC    5-14
------------------
 GROUND  4-7-8-9
------------------
  TIED
==================
```

```
             V
             |
         ____|____
        |   14    |
        |         |
      --|6       2|--
     V--|5       1|--
      --|3       4|--G
        |         |
     G--|8      12|----|
 |------|9      13|--  |
 |    --|11     10|--G |
 |      |         |    |
 |      |___7_____|    |
 |           |         |
 |           |         |
 |           G         |
 |_____________________|

           MODE 5
          =========
          5-14
          ---------
          4-7-8-10
          ---------
          9/12
          =========
```

```
        V
        |
    ____|____
   |   14    |
   |         |
 --|6       2|--
V--|5       1|--
 --|3       4|--G
   |         |
 --|8      12|--
 --|9      13|--
 --|11     10|--
   |         |
   |___7_____|
        |
        |
        G

      MODE 6
     =========
     5-14
     ---------
     4-7
     ---------

     =========
                              IC 4013 CONTINUED
                              -- **** ---------

                          ------------------        ------------------ 
         V               |        V         |      |        V         |
         |               |        |         |      |        |         |
      ___|___            |     ___|___      |      |     ___|___      |
     |  14   |           |    |  14   |     |      |    |  14   |     |
     |       |           |    |       |     |      |    |       |     |
   --|6     2|--         | G--|6     2|-----|      | G--|6     2|-----|
  V- |5     1|--         |----|5     1|--          |----|5     1|--
   --|3     4|--G           --|3     4|--G            --|3     4|--G
     |       |                |       |                 |       |
  V- |8    12|--            --|8    12|--             G--|8    12|-----|
   --|9    13|--           V--|9    13|--          |----|9    13|--   |
   --|11   10|--V           --|11   10|--G         |  --|11   10|--G  |
     |       |                |       |            |    |       |     |
     |___7___|                |___7___|            |    |___7___|     |
         |                        |                |        |         |
         |                        |                |        |         |
         G                        G                |        G         |
                                                   |__________________|
```

	MODE 7	MODE 8	MODE 9
VCC	5-8-10-14	9-14	14
GROUND	4-7	4-6-7-10	4-6-7-8-10
TIED		2/5	2/5-9/12

```
                                              IC 4013 CONTINUED
                                              -- **** ----------

       ------------------          ------------------          ------------------
      |                  |        |                  |        |                  |
      |       V          |        |       V          |        |       V          |
      |       |          |        |       |          |        |       |          |
      |    ___|___       |        |    ___|___       |        |    ___|___       |
      |   | 14    |      |        |   | 14    |      |        |   | 14    |      |
      |   |       |      |        |   |       |      |        |   |       |      |
      | G--|6     2|-----|        | G--|6     2|-----|        | G--|6     2|-----|
      |----|5     1|--            |----|5     1|--            |----|5     1|--
         --|3     4|--G              --|3     4|--G              --|3     4|--G
           |       |                   |       |                   |       |
        G--|8    12|--               --|8    12|--              V--|8    12|--
        G--|9    13|--               --|9    13|--               --|9    13|--
         --|11   10|--               --|11   10|--               --|11   10|--V
           |       |                   |       |                   |       |
           |___7___|                   |___7___|                   |___7___|
               |                           |                           |
               |                           |                           |
               G                           G                           G

            MODE 10                     MODE 11                     MODE 12
           =========                   =========                   =========
    VCC     14                         14                          8-10-14
   -------------------                 ---------                   ---------
   GROUND  4-6-7-8-9                   4-6-7                       4-6-7
   -------------------                 ---------                   ---------
    TIED    2/5                        2/5                         2/5
   -------------------                 ---------                   ---------
```

IC 4013 CONTINUED

```
-- **** ---------

         V                          V                          V
         |                          |                          |
      ___|___                    ___|___                    ___|___
     |  14   |                  |  14   |                  |  14   |
     |       |                  |       |                  |       |
   G--|6    2|--              G--|6    2|--              G--|6    2|--
   G--|5    1|--              G--|5    1|--              G--|5    1|--
    --|3    4|--               --|3    4|--               --|3    4|--
     |       |                  |       |                  |       |
   G--|8   12|--              G--|8   12|----|           G--|8   12|--
    --|9   13|--          |------|9   13|--  |           G--|9   13|--
    --|11  10|--G         |    --|11  10|--G |            --|11  10|--
     |       |            |     |       |    |             |       |
     |___7___|            |     |___7___|    |             |___7___|
         |                |         |        |                 |
         |                |         |        |                 |
         G                |         G        |                 G
                          |__________________|
```

	MODE 13	MODE 14	MODE 15
VCC	14	14	14
GROUND	5-6-7-8-10	5-6-7-8-10	5-6-7-8-9
TIED		9/12	

IC 4013 CONTINUED

```
        V
        |
     ___|___
    |  14   |
    |       |
 G--|6     2|--
 G--|5     1|--
  --|3     4|--
    |       |
 V--|8    12|--
  --|9    13|--
  --|11   10|--V
    |       |
    |___7___|
        |
        |
        G
```

```
        V
        |
     ___|___
    |  14   |
    |       |
  --|6     2|--
  --|5     1|--
  --|3     4|--
    |       |
  --|8    12|--
 V--|9    13|--
  --|11   10|--G
    |       |
    |___7___|
        |
        |
        G
```

```
         V
         |
      ___|___
     |  14   |
     |       |
   --|6     2|--
   --|5     1|--
   --|3     4|--
     |       |
  G--|8    12|----|
|----|9    13|--  |
|  --|11   10|--G |
|    |       |    |
|    |___7___|    |
|        |        |
|        |        |
|        G        |
|_________________|
```

	MODE 17	MODE 18	MODE 19
VCC	8-10-14	9-14	14
GROUND	5-6-7	7-10	7-8-10
TIED			9/12

```
                             IC 4013 CONTINUED
                             -- **** ---------

             V                       V                       V
             |                       |                       |
          ___|___                 ___|___                 ___|___
         |  14    |              |  14    |              |  14    |
         |        |              |        |              |        |
       --|6     2|--           --|6     2|--          V--|6     2|--
       --|5     1|--           --|5     1|--           --|5     1|--
       --|3     4|--           --|3     4|--           --|3     4|--V
         |        |              |        |              |        |
      G--|8    12|--          V--|8    12|--           --|8    12|--
      G--|9    13|--           --|9    13|--          V--|9    13|--
       --|11   10|--           --|11   10|--V          --|11   10|--G
         |        |              |        |              |        |
         |___7___|               |___7___|               |___7___|
             |                       |                       |
             |                       |                       |
             G                       G                       G

          MODE 20                 MODE 22                 MODE 23
         =========               =========               =========
   VCC   14                      8-10-14                 4-6-9-14
------------------               ---------               ---------
GROUND   7-8-9                   7                       7-10
------------------               ---------               ---------
```

```
                             IC 4013 CONTINUED
                             -- **** ---------

             V                       V                       V
             |                       |                       |
          ___|___                 ___|___                 ___|___
         |  14   |               |  14   |               |  14   |
         |       |               |       |               |       |
      V--|6     2|--          V--|6     2|--          V--|6     2|--
       --|5     1|--           --|5     1|--           --|5     1|--
       --|3     4|--V          --|3     4|--V          --|3     4|--V
         |       |               |       |               |       |
      G--|8    12|--          G--|8    12|--          G--|8    12|----|
       --|9    13|--          G--|9    13|--        |----|9    13|--  |
       --|11   10|--G          --|11   10|--        |  --|11   10|--G |
         |       |               |       |          |    |       |    |
         |___7___|               |___7___|          |    |___7___|    |
             |                       |              |        |        |
             |                       |              |        |        |
             G                       G              |        G        |
                                                    |_________________|

          MODE 24                 MODE 25                 MODE 26
         =========               =========               =========
   VCC   4-6-14                  4-6-14                  4-6-14
------------------               ---------               ---------
 GROUND  7-8-10                  7-8-9                   7-8-10
------------------               ---------               ---------
  TIED                                                   9/12
------------------               ---------               ---------
```

```
                              IC 4013 CONTINUED
                              -- **** ---------

                                     V
                                     |
                                  ___|___
                                 | 14    |
                                 |       |
                              V--|6     2|--
                               --|5     1|--
                               --|3     4|--V
                                 |       |
                               --|8    12|--
                               --|9    13|--
                               --|11   10|--
                                 |       |
                                 |___7___|
                                     |
                                     |
                                     G

                                 MODE 27
                                =========
          VCC                   4-6-14
       ---------                ---------
         GROUND                 7
       =========                =========
                GENERIC IC NUMBER 4502
                ================== ****

        V                          V
        |                          |
     ___|___                    ___|___
    | 16    |                  | 16    |
    |       |                  |       |
  --|3     5|--              --|3     5|--
  --|6     7|--              --|6     7|--
  --|1     2|--              --|1     2|--
    |       |                  |       |
  --|10    9|--              --|10    9|--
  --|13   11|--              --|13   11|--
  --|15   14|--              --|15   14|--
  --|12    4|--              --|12    4|--G
    |       |                  |       |
    |___8___|                  |___8___|
        |                          |
        |                          |
        G                          G

       MODE 1                    MODE 2
      =========                 =========
   VCC    16                    16
 -------------------            ----------
 GROUND   8                     4-8
 ====================           =========
                         GENERIC IC NUMBER 7474
                         ================= ****

          V                         V                         V
          |                         |                         |
       ___|___                   ___|___                   ___|___
      |  14   |                 |  14   |                 |  14   |
      |       |                 |       |                 |       |
    --|1     6|--             --|1     6|--             --|1     6|--
    --|2     5|--            V--|2     5|--            V--|2     5|--
    --|3     4|--             --|3     4|--V            --|3     4|--V
      |       |                 |       |                 |       |
    --|13    8|--             --|13    8|--            V--|13    8|--
    --|12    9|--            V--|12    9|--             --|12    9|--
    --|11   10|--             --|11   10|--V            --|11   10|--V
      |       |                 |       |                 |       |
      |___7___|                 |___7___|                 |___7___|
          |                         |                         |
          |                         |                         |
          G                         G                         G

        MODE 1                    MODE 2                    MODE 2
       =========                 =========                 =========
  VCC   14                       2-4-10-12                 2-4-10-13
                                    14                        14

------------------               ---------                 ---------
 GROUND  7                       7                         7
------------------               ---------                 ---------

          V                         V                         V
          |                         |                         |
       ___|___                   ___|___                   ___|___
      |  14   |                 |  14   |                 |  14   |
      |       |                 |       |                 |       |
    --|1     6|--            V--|1     6|--            V--|1     6|--
   V--|2     5|--             --|2     5|--             --|2     5|--
    --|3     4|--V            --|3     4|--V            --|3     4|--V
      |       |                 |       |                 |       |
   V--|13    8|--             --|13    8|--            V--|13    8|--
   G--|12    9|--            V--|12    9|--             --|12    9|--
    --|11   10|--             --|11   10|--V            --|11   10|--V
      |       |                 |       |                 |       |
      |___7___|                 |___7___|                 |___7___|
          |                         |                         |
          |                         |                         |
          G                         G                         G

        MODE 2                    MODE 2                    MODE 2
       =========                 =========                 =========
  VCC   2-4-13-14                1-4-10-12                 1-4-10-13
                                    14                        14

------------------               ---------                 ---------
 GROUND  7-12                    7                         7
------------------               ---------                 ---------
```

IC 7474 CONTINUED

```
-- **** ---------
```

```
        V
        |
     ___|___
    |  14   |
    |       |
 V--|1     6|--
  --|2     5|--
  --|3     4|--V
    |       |
 V--|13    8|--
 G--|12    9|--
  --|11   10|--
    |       |
    |___7___|
        |
        |
        G

      MODE 2
    ==========
VCC    1-4-13-14
------------------
GROUND  7-12
------------------
```

```
        V
        |
     ___|___
    |  14   |
    |       |
 V--|1     6|--
 G--|2     5|--
  --|3     4|--
    |       |
  --|13    8|--
 V--|12    9|--
  --|11   10|--V
    |       |
    |___7___|
        |
        |
        G

      MODE 2
    ==========
    1-10-12-14
    ----------
    2-7
    ----------
```

```
        V
        |
     ___|___
    |  14   |
    |       |
 V--|1     6|--
 G--|2     5|--
  --|3     4|--
    |       |
 V--|13    8|--
  --|12    9|--
  --|11   10|--V
    |       |
    |___7___|
        |
        |
        G

      MODE 2
    ==========
    1-10-13-14
    ----------
    2-7
    ---------
```

```
        V
        |
     ___|___
    |  14   |
    |       |
 V--|1     6|--
 G--|2     5|--
  --|3     4|--
    |       |
 V--|13    8|--
 G--|12    9|--
  --|11   10|--
    |       |
    |___7___|
        |
        |
        G

      MODE 2
    =========
VCC    1-13-14

------------------
GROUND  2-7-12
------------------
  TIED
------------------
```

```
          V
          |
       ___|___
      |  14   |
      |       |
    --|1     6|--
   V--|2     5|--
    --|3     4|--V
      |       |
   V--|13    8|----|
|-----|12    9|--  |
|   --|11   10|--V |
|     |       |    |
|     |___7___|    |
|         |        |
|         |        |
|         G        |
|__________________|

      MODE 3
    =========
    2-4-10-13
       14
    ---------
    7
    ---------
    8/12
    ---------
```

```
          V
          |
       ___|___
      |  14   |
      |       |
   V--|1     6|--
    --|2     5|--
    --|3     4|--V
      |       |
   V--|13    8|----|
|-----|12    9|--  |
|   --|11   10|--V |
|     |       |    |
|     |___7___|    |
|         |        |
|         |        |
|         G        |
|__________________|

      MODE 3
    =========
    1-4-10-13
       14
    ---------
    7
    ---------
    8/12
    ---------
```

```
                            IC 7474 CONTINUED
                            -- **** ---------

             V                       V                       V
             |                       |                       |
          ___|___                 ___|___                 ___|___
         |  14   |               |  14   |               |  14   |
         |       |               |       |               |       |
      V--|1      6|--          --|1      6|--         V--|1      6|--
      G--|2      5|--         V--|2      5|--          --|2      5|--
       --|3      4|--          --|3      4|--V         --|3      4|--V
         |       |               |       |               |       |
      V--|13    8|----|        --|13    8|--           --|13    8|--
    |----|12    9|--  |        --|12    9|--           --|12    9|--
    |  --|11   10|--V |        --|11   10|--           --|11   10|--
    |    |       |    |          |       |               |       |
    |    |___7___|    |          |___7___|               |___7___|
    |        |        |              |                       |
    |        |        |              |                       |
    |        G        |              G                       G
    |_________________|


          MODE 3                  MODE 4                  MODE 4
         ==========              =========               =========
   VCC   1-10-13-14              2-4-14                  1-4-14
-------------------              ---------               ---------
 GROUND  2-7                     7                       7
-------------------              ---------               ---------
  TIED   8/12
-------------------              ---------               ---------
```

IC 7474 CONTINUED
-- **** ----------

```
         V
         |
      ___|___
     | 14    |
     |       |
  V--|1     6|--
  G--|2     5|--
   --|3     4|--
     |       |
   --|13    8|--
   --|12    9|--
   --|11   10|--
     |       |
     |___7___|
         |
         |
         G
```

```
 ------------------
|                  |
|        V         |
|        |         |
|     ___|___      |
|    | 14    |     |
|    |       |     |
| V--|1     6|-----|
|----|2     5|--
   --|3     4|--V
     |       |
   --|13    8|--
  V--|12    9|--
   --|11   10|--V
     |       |
     |___7___|
         |
         |
         G
```

```
 ------------------
|                  |
|        V         |
|        |         |
|     ___|___      |
|    | 14    |     |
|    |       |     |
| V--|1     6|-----|
|----|2     5|--
   --|3     4|--V
     |       |
  V--|13    8|--
   --|12    9|--
   --|11   10|--V
     |       |
     |___7___|
         |
         |
         G
```

	MODE 4	MODE 5	MODE 5
VCC	1-14	1-4-10-12 14	1-4-10-13 14
GROUND	2-7	7	7
TIED		2/6	2/6

IC 7474 CONTINUED
-- **** ---------

```
 -----------------       -----------------       -----------------
|                 |     |                 |     |                 |
|        V        |     |        V        |     |        V        |
|        |        |     |        |        |     |        |        |
|     ___|___     |     |     ___|___     |     |     ___|___     |
|    |  14   |    |     |    |  14   |    |     |    |  14   |    |
|    |       |    |     |    |       |    |     |    |       |    |
| V--|1     6|----|     | V--|1     6|----|     | V--|1     6|----|
|----|2     5|--        |----|2     5|--        |----|2     5|--
   --|3     4|--V          --|3     4|--V          --|3     4|--V
     |       |               |       |               |       |
  V--|13    8|--          V--|13    8|----|        --|13    8|--
  G--|12    9|--        |----|12    9|--  |        --|12    9|--
   --|11   10|--        |  --|11   10|--V |        --|11   10|--
     |       |          |    |       |    |          |       |
     |___7___|          |    |___7___|    |          |___7___|
         |              |        |        |              |
         |              |        |        |              |
         G              |        G        |              G
                        |_________________|
```

	MODE 5	MODE 6	MODE 7
VCC	1-4-13-14	1-4-10-13 14	1-4-14
GROUND	7-12	7	7
TIED	2/6	2/6-8/12	2/6

```
                             IC 7474 CONTINUED
                             -- **** ----------

             V                        V                        V
             |                        |                        |
          ___|___                  ___|___                  ___|___
         |  14   |                |  14   |                |  14   |
         |       |                |       |                |       |
       --|1     6|--           V--|1     6|--           V--|1     6|--
      V--|2     5|--             --|2     5|--           G--|2     5|--
       --|3     4|--V            --|3     4|--V            --|3     4|--
         |       |                |       |                |       |
       --|13    8|--             --|13    8|--             --|13    8|--
       --|12    9|--             --|12    9|--             --|12    9|--
       --|11   10|--             --|11   10|--             --|11   10|--
         |       |                |       |                |       |
         |___7___|                |___7___|                |___7___|
             |                        |                        |
             |                        |                        |
             G                        G                        G

          MODE 8                   MODE 8                   MODE 8
         =========                =========                =========
   VCC   2-4-14                   1-4-14                   1-14
-------------------               ----------               ----------
 GROUND  7                        7                        2-7
-------------------               ----------               ----------
```

```
             V                        V                        V
             |                        |                        |
          ___|___                  ___|___                  ___|___
         |  14   |                |  14   |                |  14   |
         |       |                |       |                |       |
       --|1     6|--           G--|1     6|--           G--|1     6|--
       --|2     5|--             --|2     5|--             --|2     5|--
       --|3     4|--             --|3     4|--G            --|3     4|--G
         |       |                |       |                |       |
      V--|13    8|----|          --|13    8|--           V--|13    8|--
    |----|12    9|--  |        V--|12    9|--             --|12    9|--
    |  --|11   10|--V |          --|11   10|--V            --|11   10|--V
    |    |       |    |           |       |                |       |
    |    |___7___|    |           |___7___|                |___7___|
    |        |        |               |                        |
    |        |        |               |                        |
    |        G        |               G                        G
    |_________________|

          MODE 9                   MODE 11                  MODE 11
         =========                =========                =========
   VCC   10-13-14                 10-12-14                 10-13-14
-------------------               ----------               ----------
 GROUND  7                        1-4-7                    1-4-7
-------------------               ----------               ----------
  TIED   8/12
-------------------               ----------               ----------
```

```
                          IC 7474 CONTINUED
                          -- **** ---------

         V                        V                        V
         |                        |                        |
      ___|___                  ___|___                  ___|___
     |  14   |                |  14   |                |  14   |
     |       |                |       |                |       |
  G--|1     6|--           G--|1     6|--           G--|1     6|--
   --|2     5|--            --|2     5|--            --|2     5|--
   --|3     4|--G           --|3     4|--G           --|3     4|--G
     |       |                |       |                |       |
  V--|13    8|--           V--|13    8|----|          --|13    8|--
  G--|12    9|--         |----|12    9|--  |          --|12    9|--
   --|11   10|--         |  --|11   10|--V |          --|11   10|--
     |       |           |    |       |    |           |       |
     |___7___|           |    |___7___|    |           |___7___|
         |               |        |        |               |
         |               |        |        |               |
         G               |        G        |               G
                         |_________________|

        MODE 11                MODE 12                  MODE 13
       =========              =========                =========
  VCC    13-14                10-13-14                 14
------------------            ---------                ---------
GROUND  1-4-7-12-             1-4-7                    1-4-7
          14
------------------            ---------                ---------
  TIED                        8/12
------------------            ---------                ---------

         V                        V                        V
         |                        |                        |
      ___|___                  ___|___                  ___|___
     |  14   |                |  14   |                |  14   |
     |       |                |       |                |       |
   --|1     6|--           V--|1     6|--           V--|1     6|--
  V--|2     5|--            --|2     5|--           G--|2     5|--
   --|3     4|--V           --|3     4|--V           --|3     4|--
     |       |                |       |                |       |
  G--|13    8|--           G--|13    8|--           G--|13    8|--
   --|12    9|--            --|12    9|--            --|12    9|--
   --|11   10|--G           --|11   10|--G           --|11   10|--G
     |       |                |       |                |       |
     |___7___|                |___7___|                |___7___|
         |                        |                        |
         |                        |                        |
         G                        G                        G

        MODE 14                MODE 14                  MODE 14
       =========              =========                =========
  VCC    2-4-14               1-4-14                   1-14
------------------            ---------                ---------
GROUND  7-10-13               7-10-13                  2-7-10-13
------------------            ---------                ---------
```

```
                  IC 7474 CONTINUED
                  -- **** ----------

     ------------------
    |                 |
    |        V        |              V
    |        |        |              |
    |    ____|____    |          ____|____
    |    |  14   |    |          |  14   |
    |    |       |    |          |       |
    | V--|1     6|----|        --|1     6|--
    |----|2     5|--           --|2     5|--
       --|3     4|--V          --|3     4|--
         |       |               |       |
      G--|13    8|--          G--|13    8|--
       --|12    9|--           --|12    9|--
       --|11   10|--G          --|11   10|--G
         |       |               |       |
         |___7___|               |___7___|
             |                       |
             |                       |
             G                       G

          MODE 15                 MODE 16
         ==========              ==========
   VCC   1-4-14                  14
-------------------              ----------
 GROUND  7-10-13                 7-10-13
-------------------              ----------
  TIED   2/6
===================              ==========
                          GENERIC IC NUMBER 74138
                          ================= *****

             V                         V                         V
             |                         |                         |
          ___|___                   ___|___                   ___|___
         |  16   |                 |  16   |                 |  16   |
         |       |                 |       |                 |       |
     A0--|1    15|--0          A0--|1    15|--0          A0--|1    15|--0
     A1--|2    14|--1          A1--|2    14|--1          A1--|2    14|--1
     A2--|3    13|--2          A2--|3    13|--2          A2--|3    13|--2
         |     12|--3              |     12|--3              |     12|--3
         |     11|--4              |     11|--4              |     11|--4
     E1--|4    10|--5       G--E1--|4    10|--5          E1--|4    10|--5
     E2--|5     9|--6          E2--|5     9|--6       G--E2--|5     9|--6
     E3--|6     7|--7          E3--|6     7|--7          E3--|6     7|--7
         |       |                 |       |                 |       |
         |___8___|                 |___8___|                 |___8___|
             |                         |                         |
             |                         |                         |
             G                         G                         G


          MODE 1                    MODE 2                    MODE 2
         =========                 =========                 =========
    VCC    16                      16                        16
  ------------------               ---------                 ---------
   GROUND  8                       4-8                       5-8
  ------------------               ---------                 ---------

             V                         V                         V
             |                         |                         |
          ___|___                   ___|___                   ___|___
         |  16   |                 |  16   |                 |  16   |
         |       |                 |       |                 |       |
     A0--|1    15|--0          A0--|1    15|--0          A0--|1    15|--0
     A1--|2    14|--1          A1--|2    14|--1          A1--|2    14|--1
     A2--|3    13|--2          A2--|3    13|--2          A2--|3    13|--2
         |     12|--3              |     12|--3              |     12|--3
         |     11|--4              |     11|--4              |     11|--4
     E1--|4    10|--5       G--E1--|4    10|--5       G--E1--|4    10|--5
     E2--|5     9|--6       G--E2--|5     9|--6          E2--|5     9|--6
  V--E3--|6     7|--7          E3--|6     7|--7       V--E3--|6     7|--7
         |       |                 |       |                 |       |
         |___8___|                 |___8___|                 |___8___|
             |                         |                         |
             |                         |                         |
             G                         G                         G


          MODE 2                    MODE 3                    MODE 3
         =========                 =========                 =========
    VCC    6-16                    16                        6-16
  ------------------               ---------                 ---------
   GROUND  8                       4-5-8                     4-8
  ------------------               ---------                 ---------
```

IC 74138 CONTINUED
-- ***** ---------

```
           V                       V                       V
           |                       |                       |
        ___|___                 ___|___                 ___|___
       |  16   |               |  16   |               |  16   |
       |       |               |       |               |       |
   A0--|1    15|--0        A0--|1    15|--0        A0--|1    15|--0
   A1--|2    14|--1        A1--|2    14|--1        A1--|2    14|--1
   A2--|3    13|--2        A2--|3    13|--2        A2--|3    13|--2
       |     12|--3            |     12|--3            |     12|--3
       |     11|--4            |     11|--4            |     11|--4
   E1--|4    10|--5        E1--|4    10|--5        E1--|4    10|--5
G--E2--|5     9|--6        E2--|5     9|--6        E2--|5     9|--6
V--E3--|6     7|--7        E3--|6     7|--7     V--E3--|6     7|--7
       |       |               |       |               |       |
       |___8___|               |___8___|               |___8___|
           |                       |                       |
           |                       |                       |
           G                       G                       G

        MODE 3                  MODE 4                  MODE 5
       =========               =========               =========
  VCC    6-16                  16                      6-16
--------------------           ---------               ---------
 GROUND  5-8                   8                       8
--------------------           ---------               ---------
```

```
                             V
                             |
                          ___|___
                         |  16   |
                         |       |
                     A0--|1    15|--0
                     A1--|2    14|--1
                     A2--|3    13|--2
                         |     12|--3
                         |     11|--4
                  G--E1--|4    10|--5
                  G--E2--|5     9|--6
                  V--E3--|6     7|--7
                         |       |
                         |___8___|
                             |
                             |
                             G

                          MODE 6
                         =========
  VCC                    6-16
---------                ---------
 GROUND                  4-5-8
=========                =========
                              GENERIC IC NUMBER 74139
                              ================= *****

            V                         V                         V
            |                         |                         |
         ___|___                   ___|___                   ___|___
         |  16   |                 |  16   |                 |  16   |
         |       |                 |       |                 |       |
       --|1     4|--             --|15    4|--             --|1     4|--
       --|15    5|--               |      5|--               |      5|--
         |      6|--               |      6|--               |      6|--
       --|2     7|--             --|2     7|--             --|2     7|--
       --|3     9|--             --|3     9|--             --|3     9|--
       --|     10|--               |     10|--               |     10|--
       --|13   11|--             --|13   11|--             --|13   11|--
       --|14   12|--             --|14   12|--             --|14   12|--
         |       |                 |       |                 |       |
         |___8___|                 |__1_8__|                 |_15_8__|
             |                        | |                      |   |
             |                        | |                      |   |
             G                        G G                      G   G

          MODE 1                    MODE 2                    MODE 3
         =========                 =========                 =========
   VCC    16                       16                        16
   ------------------              ---------                 ---------
   GROUND  8                       1-8                       8-15
   ------------------              ---------                 ---------

                                      V
                                      |
                                   ___|___
                                   |  16   |
                                   |       |
                                 --|2     4|--
                                 --|3     5|--
                                 --|13    6|--
                                 --|14    7|--
                                   |      9|--
                                   |     10|--
                                   |     11|--
                                   |     12|--
                                   |       |
                                   |1_15_8_|
                                    | |   |
                                    | |   |
                                    G G   G

                                    MODE 4
                                   =========
   VCC                             16
   ---------                       ---------
   GROUND                          1-8-15
   =========                       =========

                                      M20
```

```
GENERIC IC NUMBER 74173
================== *****
```

```
      V
      |
      |
  ___|___
 |  16   |
 |       |
--|9    1|--
--|10   2|--
--|14   3|--
--|13   4|--
--|12   5|--
--|11   6|--
--|7   15|--
 |       |
 |___8___|
      |
      |
      G

     MODE 1
    =========
  VCC    16
--------------------
GROUND  8
--------------------
```

```
      V
      |
      |
  ___|___
 |  16   |
 |       |
--|2    9|--
--|14  10|--
--|13   3|--
--|12   4|--
--|11   5|--
 |      6|--
--|7   15|--
 |       |
 |__1_8__|
     | |
     | |
     G G

   MODE 2
  =========
  16
  ---------
  1-8
  ---------
```

```
      V
      |
      |
  ___|___
 |  16   |
 |       |
--|1    9|--
--|14  10|--
--|13   3|--
  |12   4|
--|11   5|--
  |     6|--
--|7   15|--
 |       |
 |__2_8__|
     | |
     | |
     G G

   MODE 2
  =========
  16
  ---------
  2-8
  ---------
```

```
      V
      |
      |
  ___|___
 |  16   |
 |       |
--|1   10|--
--|2      |
--|14   3|--
--|13   4|--
--|12   5|--
--|11   6|--
--|7   15|--
 |       |
 |__9_8__|
     | |
     | |
     G G

     MODE 2
    =========
  VCC    16
--------------------
GROUND  8-9
--------------------
```

```
      V
      |
      |
  ___|___
 |  16   |
 |       |
--|1    9|--
--|2     |
--|14   3|--
--|13   4|--
--|12   5|--
--|11   6|--
--|7   15|--
 |       |
 |_10_8__|
     | |
     | |
     G G

   MODE 2
  =========
  16
  ---------
  8-10
  ---------
```

```
      V
      |
      |
  ___|___
 |  16   |
 |       |
--|     9|--
--|14  10|--
--|13   3 --
  |12   4|
--|11   5|--
--|     6|--
--|7   15|--
 |       |
 |_1_8_2_|
    | | |
    | | |
    G G G

   MODE 3
  =========
  16
  ---------
  1-2-8
  ---------
```

```
IC 74173 CONTINUED
-- ***** ----------
```

```
        V                    V                    V
        |                    |                    |
     ___|___              ___|___              ___|___
    |  16   |            |  16   |            |  16   |
    |       |            |       |            |       |
  --|2    10|--        --|2     9|--        --|1    10|--
    |       |            |       |            |       |
  --|14    3|--        --|14    3|--        --|14    3|--
  --|13    4|--        --|13    4|--        --|13    4|--
  --|12    5|--        --|12    5|--        --|12    5|--
  --|11    6|--        --|11    6|--        --|11    6|--
  --|7    15|--        --|7    15|--        --|7    15|--
    |       |            |       |            |       |
    |_1_8_9_|            |_1_8_10|            |_2_8_9_|
      | | |                | | |                | | |
      | | |                | | |                | | |
      G G G                G G G                G G G

     MODE 3               MODE 3               MODE 3
    =========            =========            =========
 VCC    16               16                   16
--------------------     ---------            ---------
 GROUND  1-8-9           1-8-10               2-8-9
--------------------     ---------            ---------
```

```
        V                    V                    V
        |                    |                    |
     ___|___              ___|___              ___|___
    |  16   |            |  16   |            |  16   |
    |       |            |       |            |       |
  --|1     9|--        --|1     3|--          |     10|--
    |       |          --|2     4|--          |       |
  --|14    3|--          |      5|--        --|14    3|--
  --|13    4|--        --|14    6|--        --|13    4|--
  --|12    5|--        --|13     |          --|12    5|--
  --|11    6|--        --|12     |          --|11    6|--
  --|7    15|--        --|11     |            |       |
    |       |          --|7    15|--        --|7    15|--
    |_2_8_10|            |       |            |       |
      | | |              |_8_9_10|            |1_2_9_8|
      | | |                | | |               | | | |
      G G G                | | |               | | | |
                           G G G               G G G G

     MODE 3               MODE 3               MODE 4
    =========            =========            =========
 VCC    16               16                   16
--------------------     ---------            ---------
 GROUND  2-8-10          8-9-10               1-2-8-9
--------------------     ---------            ---------
```

IC 74173 CONTINUED

```
-- ***** ----------
```

```
        V
        |
    ___|___
   |  16   |
   |       |
   |      9|--
 --|14    3|--
 --|13    4|--
 --|12    5|--
 --|11    6|--
   |       |
 --|7    15|--
   |       |
   |1_2_10_8
    | | |  |
    | | |  |
    G G G  G

     MODE  4
    =========
 VCC    16
--------------------
 GROUND  1-2-8-10
--------------------
```

```
        V
        |
    ___|___
   |  16   |
   |       |
 --|2      |
 --|14    3|--
 --|13    4|--
 --|12    5|--
 --|11    6|--
   |       |
 --|7    15|--
   |       |
   |1_9_10_8
    | | |  |
    | | |  |
    G G G  G

    MODE  4
  =========
  16
  ---------
  1-8-9-10
  ---------
```

```
        V
        |
    ___|___
   |  16   |
   |       |
 --|1      |
 --|14    3|--
 --|13    4|--
 --|12    5|--
 --|11    6|--
   |       |
 --|7    15|--
   |       |
   |2_9_10_8
    | | |  |
    | | |  |
    G G G  G

    MODE  4
  =========
  16
  ---------
  2-8-9-10
  ---------
```

```
        V
        |
    ___|___
   |  16   |
   |       |
 --|14    3|--
 --|13    4|--
 --|12    5|--
 --|11    6|--
   |       |
 --|7    15|--
   |       |
   9_10_8_1_2
   | |   | | |
   | |   | | |
   G G   G G G

    MODE  5
  ==========
  16
  ----------
  1-2-8-9-10
  ==========
```

```
   VCC
----------
 GROUND
=========
                GENERIC IC NUMBER 74174
                ================= *****

                      V                         V
                      |                         |
                   ___|___                   ___|___
                  |  16   |                 |  16   |
                  |       |                 |       |
                --|9      |               --|9      |
                --|2     3|--             --|2     3|--
                --|5     4|--             --|5     4|--
                --|7     6|--             --|7     6|--
                --|10   11|--             --|10   11|--
                --|12   13|--             --|12   13|--
                  |     14|--               |     14|--
                --|15    1|--             --|15    1|--V
                  |       |                 |       |
                  |___8___|                 |___8___|
                      |                         |
                      |                         |
                      G                         G

                   MODE 1                    MODE 2
                  =========                 =========
          VCC    16                         1-16
         -------------------                ---------
        GROUND  8                           8
        ===================                 =========
GENERIC IC NUMBER 74240
================== *****
```

```
     V
     |
     |__|_|_
    |20 1 19|
    |       |
  --|2    18|--
  --|4    16|--
  --|6    14|--
  --|8    12|--
  --|11    9|--
  --|13    7|--
  --|15    5|--
  --|17    3|--
    |       |
    |__10___|
        |
        |
        G

      MODE 1
     =========
  VCC    20
--------------------
 GROUND   10
--------------------
```

```
     V
     |
   _|__|_
  | 20 19 |
  |       |
--|2    18|--
--|4    16|--
--|6    14|--
--|8    12|--
--|11    9|--
--|13    7|--
--|15    5|--
--|17    3|--
  |       |
  |_10_1__|
     |  |
     |  |
     G  G

   MODE 2
  =========
  20
  ----------
  1-10
  ----------
```

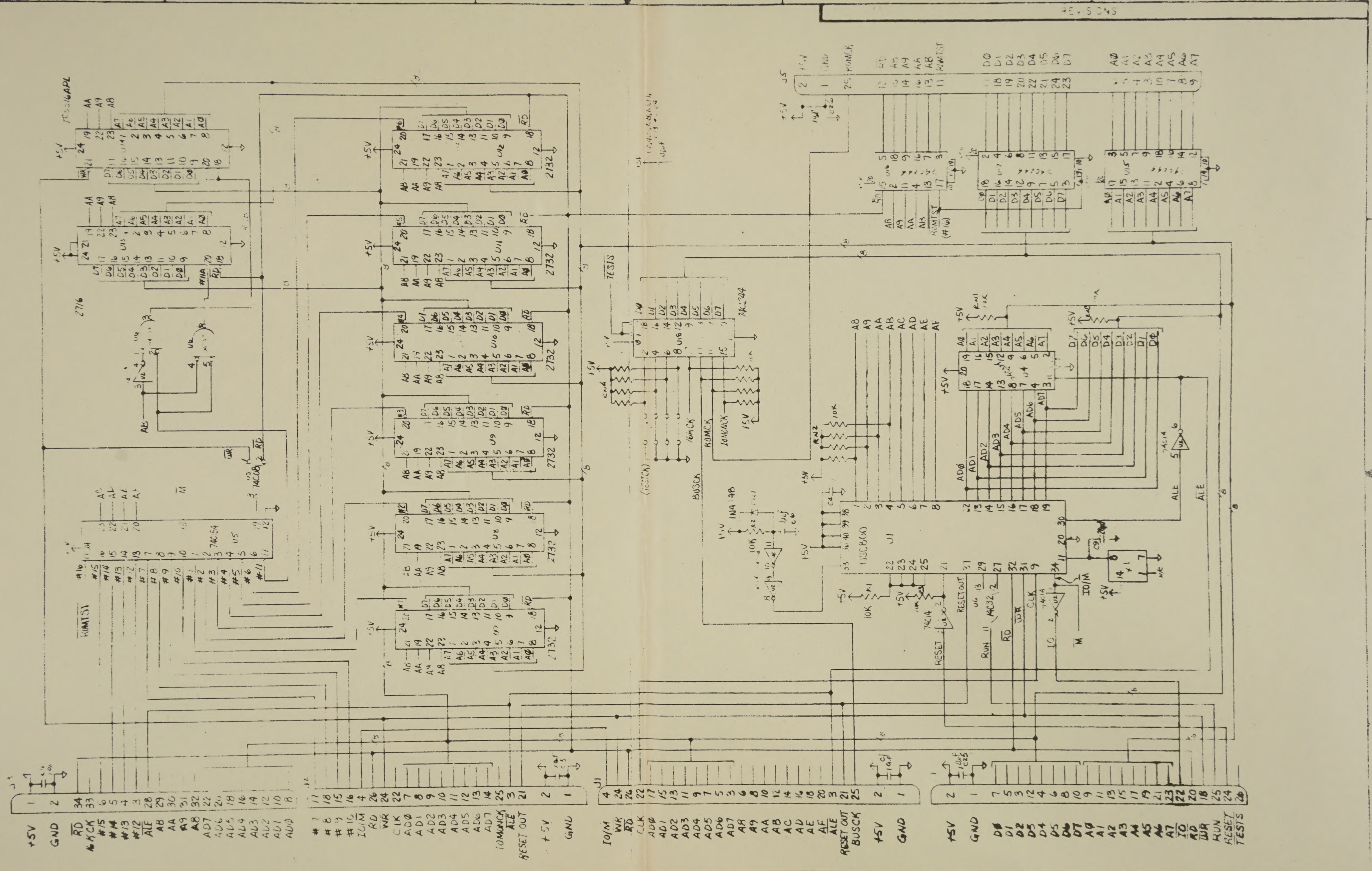
```
     V
     |
   __|__|_
  |  20 1 |
  |       |
--|2    18|--
--|4    16|--
--|6    14|--
--|8    12|--
--|11    9|--
--|13    7|--
--|15    5|--
--|17    3|--
  |       |
  |_10_19_|
     |  |
     |  |
     G  G

   MODE 3
  =========
  20
  ----------
  10-19
  ----------
```

```
       V
       |
   __|____
  |  20    |
  |        |
--|2    18|--
--|4    16|--
--|6    14|--
--|8    12|--
--|11    9|--
--|13    7|--
--|15    5|--
--|17    3|--
  |       |
  |1_10_19|
   |  |  |
   |  |  |
   G G   G

   MODE 4
  =========
  20
  ----------
  1-10-19
  =========
```

```
   VCC
----------
  GROUND
==========
                              GENERIC IC NUMBER 74241
                              ================= *****

          V                           V                          V   V
          |                           |                          |   |
          |__|_|_                   _|__|__                      |__|_|_
         |20 1 19|                 | 20 19 |                    |20 1 19|
         |       |                 |       |                    |       |
       --|2    18|--             --|2    18|--                --|2    18|--
       --|4    16|--             --|4    16|--                --|4    16|--
       --|6    14|--             --|6    14|--                --|6    14|--
       --|8    12|--             --|8    12|--                --|8    12|--
       --|11    9|--             --|11    9|--                --|11    9|--
       --|13    7|--             --|13    7|--                --|13    7|--
       --|15    5|--             --|15    5|--                --|15    5|--
       --|17    3|--             --|17    3|--                --|17    3|--
         |       |                 |       |                    |       |
         |__10___|                 |_10_1__|                    |__10___|
             |                       |  |                           |
             |                       |  |                           |
             G                       G  G                           G

           MODE 1                  MODE 2                       MODE 3
          =========               =========                    =========
   VCC    20                      20                           19-20
  ------------------              ---------                    ---------
  GROUND  10                      1-10                         10
  ------------------              ---------                    ---------
```

```
                                      V  V
                                      |  |
                                    _|__|__
                                   | 20 19 |
                                   |       |
                                 --|2    18|--
                                 --|4    16|--
                                 --|6    14|--
                                 --|8    12|--
                                 --|11    9|--
                                 --|13    7|--
                                 --|15    5|--
                                 --|17    3|--
                                   |       |
                                   |_10_1__|
                                     |  |
                                     |  |
                                     G  G

                                    MODE 4
                                   =========
     VCC                           19-20
  ---------                        ---------
   GROUND                          1-10
  =========                        =========
                          GENERIC IC NUMBER 74244
                          ================== *****

          V                          V                          V
          |                          |                          |
          |__|_|_                  _|__|__                    __|__|_
         |20 1 19|                | 20 19 |                  |  20 1 |
         |       |                |       |                  |       |
       --|2    18|--            --|2    18|--              --|2    18|--
       --|4    16|--            --|4    16|--              --|4    16|--
       --|6    14|--            --|6    14|--              --|6    14|--
       --|8    12|--            --|8    12|--              --|8    12|--
       --|11    9|--            --|11    9|--              --|11    9|--
       --|13    7|--            --|13    7|--              --|13    7|--
       --|15    5|--            --|15    5|--              --|15    5|--
       --|17    3|--            --|17    3|--              --|17    3|--
         |       |                |       |                  |       |
         |__10___|                |_10_1__|                  |_10_19_|
             |                      |  |                       |  |
             |                      |  |                       |  |
             G                      G  G                       G  G

           MODE 1                  MODE 2                     MODE 3
         =========               =========                  =========
   VCC     20                    20                         20
 -------------------             ---------                  ---------
  GROUND   10                    1-10                       10-19
 -------------------             ---------                  ---------

                                     V
                                     |
                                   __|____
                                  |  20   |
                                  |       |
                                --|2    18|--
                                --|4    16|--
                                --|6    14|--
                                --|8    12|--
                                --|11    9|--
                                --|13    7|--
                                --|15    5|--
                                --|17    3|--
                                  |       |
                                  |1_10_19|
                                   | |   |
                                   | |   |
                                   G G   G


                                   MODE 4
                                 =========
    VCC                          20
 ----------                      ---------
   GROUND                        1-10-19
 ==========                      =========
             GENERIC IC NUMBER 74374
             ================= *****

           V                         V
           |                         |
          _|__|__                 ___|___
         | 20 1  |               |  20   |
         |       |               |       |
       --|2     1|--           --|2     1|--
       --|5     4|--           --|5     4|--
       --|6     7|--           --|6     7|--
         |9     8|               |9     8|
       --|12   13|--           --|12   13|--
       --|15   14|--           --|15   14|--
       --|16   17|--           --|16   17|--
         |19   18|               |19   18|
         |10     |               |10     |
         |       |               |       |
         |__10___|               |__1_10_|
            |                       | |
            |                       | |
            G                       G G

          MODE 1                  MODE 2
         =========               =========
   VCC   20                      20
------------------               ---------
 GROUND  10                      1-10
==================               =========
```

```
             GENERIC IC NUMBER 74374
             ================== *****

           V                          V
           |                          |
          _|__|__                 ___|___
         | 20 1  |               |  20   |
         |       |               |       |
       --|2     1|--           --|2     1|--
       --|5     4|--           --|5     4|--
       --|6     7|--           --|6     7|--
         |9     8|               |9     8|
       --|12   13|--           --|12   13|--
       --|15   14|--           --|15   14|--
       --|16   17|--           --|16   17|--
         |19   18|               |19   18|
         |10     |               |10     |
         |       |               |       |
         |__10___|               |__1_10_|
            |                       | |
            |                       | |
            G                       G G

          MODE 1                  MODE 2
         =========               =========
   VCC   20                      20
------------------               ---------
 GROUND  10                      1-10
==================               =========
```



REVISIONS
5
4
3
2
1
D
C
B
A
2716
2732
2732
2732
2732
2732
2732
74C54
74C08
74C244
NSC800
74C14
74C32
1N4148
10K
J1
J5
+5V
GND
RD
WR
IO/M
CLK
AD0
AD1
AD2
AD3
AD4
AD5
AD6
AD7
A8
A9
AA
AB
AC
AD
AE
AF
ALE
RESET OUT
BUSCK
IOMACK
ROMCK
TESTS
RESET
RUN
D0
D1
D2
D3
D4
D5
D6
D7
A0
A1
A2
A3
A4
A5
A6
A7
IO
ROMTST

MICRO SCIENCES INC

7.11 *CPU P.C.B.*

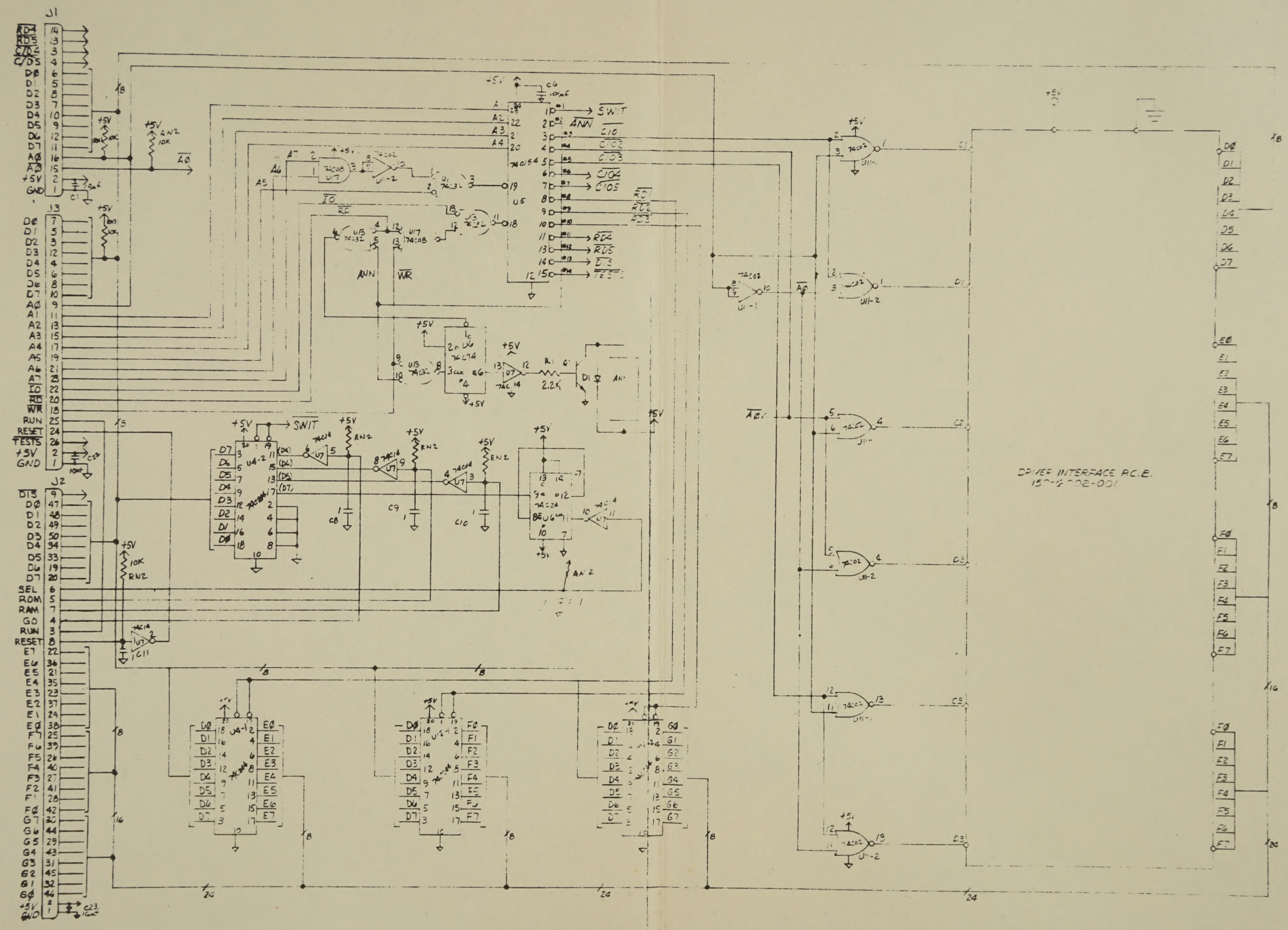
Logic Diagram

SIZE	CODE IDENT NO
B	6Z002

SCALE NONE

REV

1 OF 1

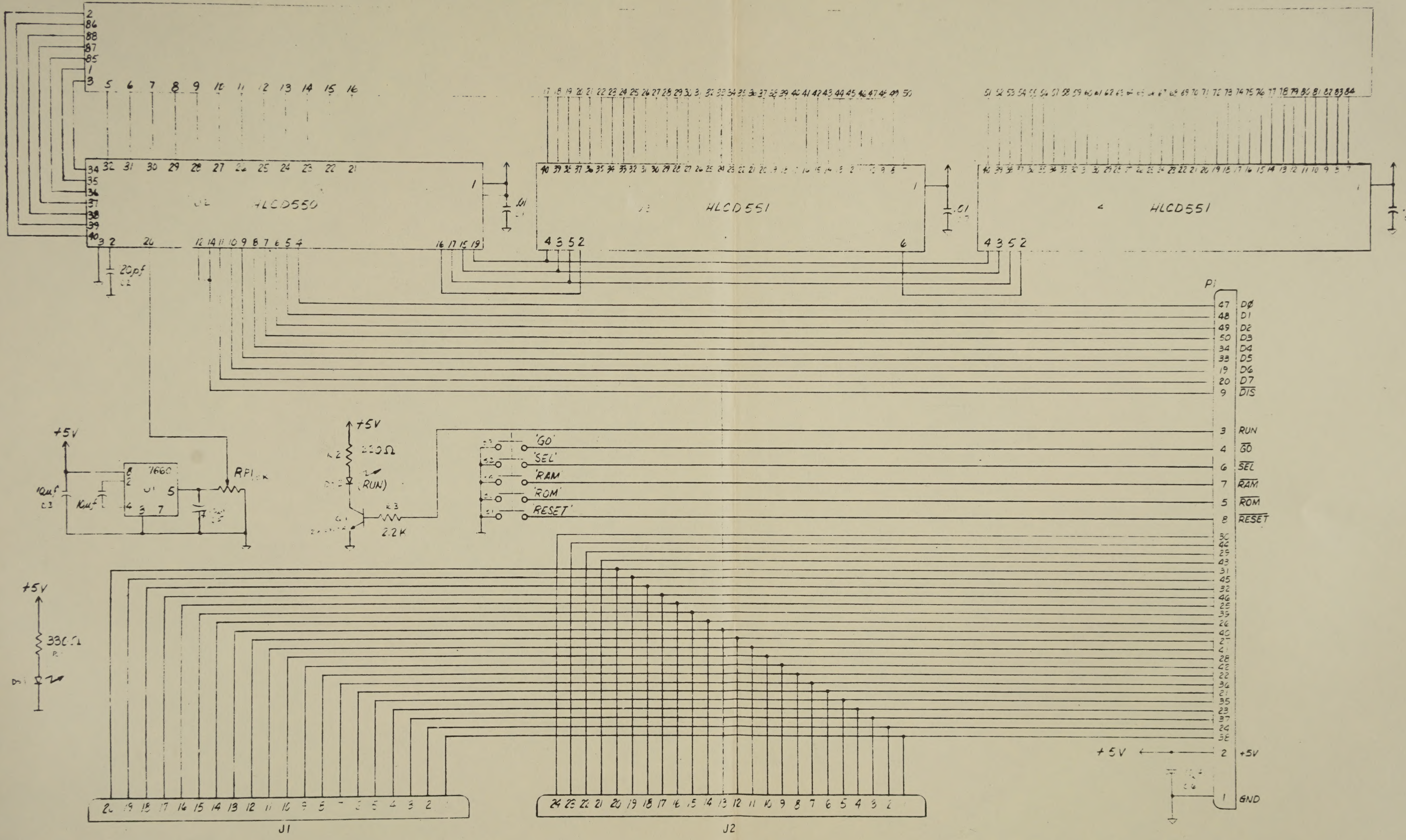

J1
RD4
RD5
C/D4
C/D5
D0
D1
D2
D3
D4
D5
D6
D7
A0
A0
+5V
GND
C1
RN2 10K
J3
J2
DIS
SEL
ROM
RAM
GO
RUN
RESET
TESTS
A1
A2
A3
A4
A5
A6
A7
IO
RD
WR
E0
E1
E2
E3
E4
E5
E6
E7
F0
F1
F2
F3
F4
F5
F6
F7
G0
G1
G2
G3
G4
G5
G6
G7
C6 .01µf
74C154
U5
SWIT
ANN
C10
C102
C103
C104
C105
RD1
RD2
RD3
RD4
RD5
TEST
74C08
74C02
74C32
74C74
74C14
U4-2
74C374
R1 2.2K
D1
C8
C9
C10
C11
C23
74C24
U6
AN 2
U11-1
U11-2
DRIVER INTERFACE P.C.B.
150-6002-001
D
C
B
A

MSI MICRO SCIENCES, INC
P.O. BOX 41540 • DALLAS, TEXAS 75241

7.12 MAIN P.C.B.
Logic Diagram

SIZE B	CODE IDENT NO 6Z002	
SCALE NONE	REV ___	SHEET 1 OF 1

REVISIONS


HLCD550
HLCD551
HLCD551
.01
.01
.01
20pf
+5V
7660
RP1
10uf
10uf
+5V
220Ω
(RUN)
2.2K
+5V
330Ω
'GO'
'SEL'
'RAM'
'ROM'
'RESET'
P1
D0
D1
D2
D3
D4
D5
D6
D7
DIS
RUN
GO
SEL
RAM
ROM
RESET
+5V
GND
J1
J2

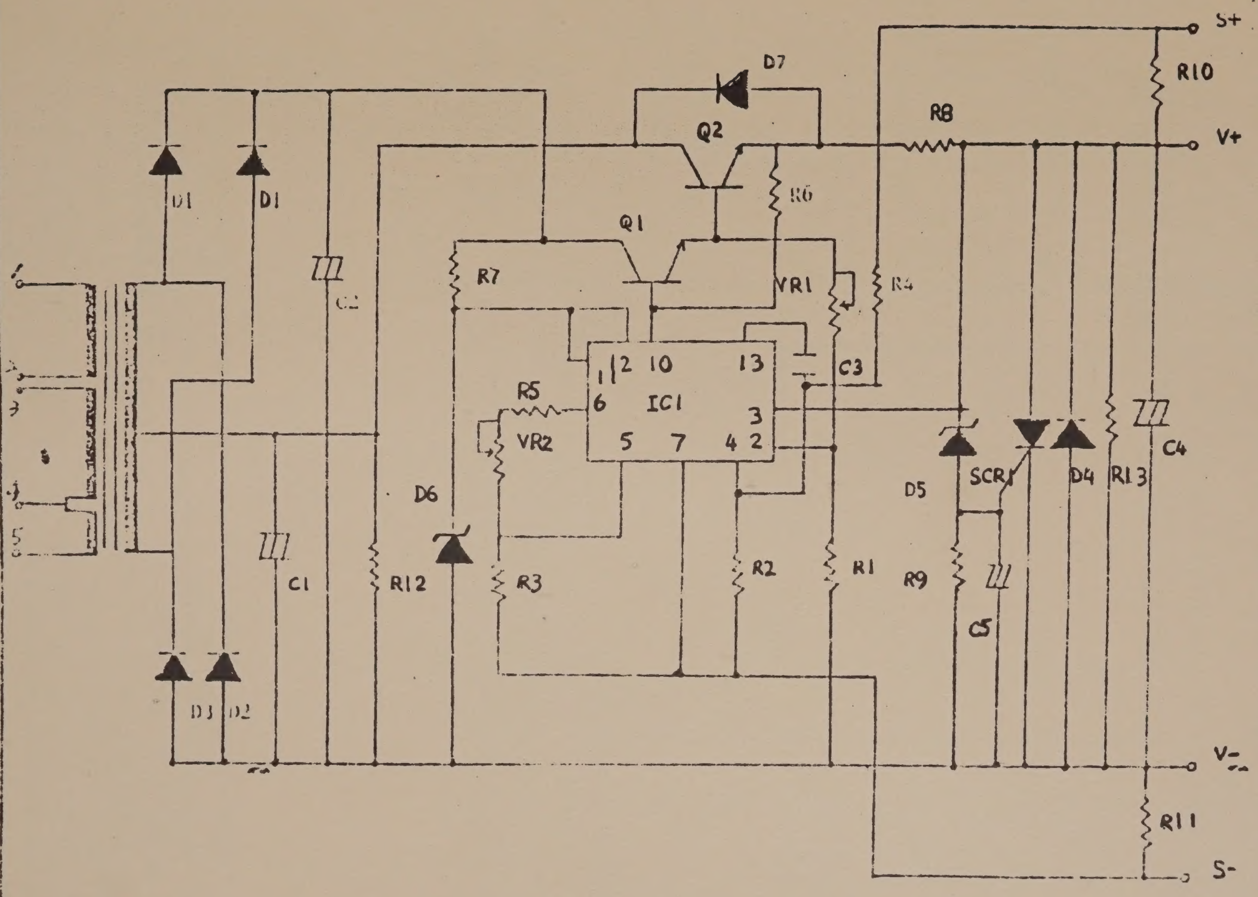
MICRO SCIENCES INC

7.13 *DISPLAY P.C.B.*
Logic Diagram

SIZE	CODE IDENT NO		
B	6Z002		
SCALE NONE		REV	SHEET 1 OF 1

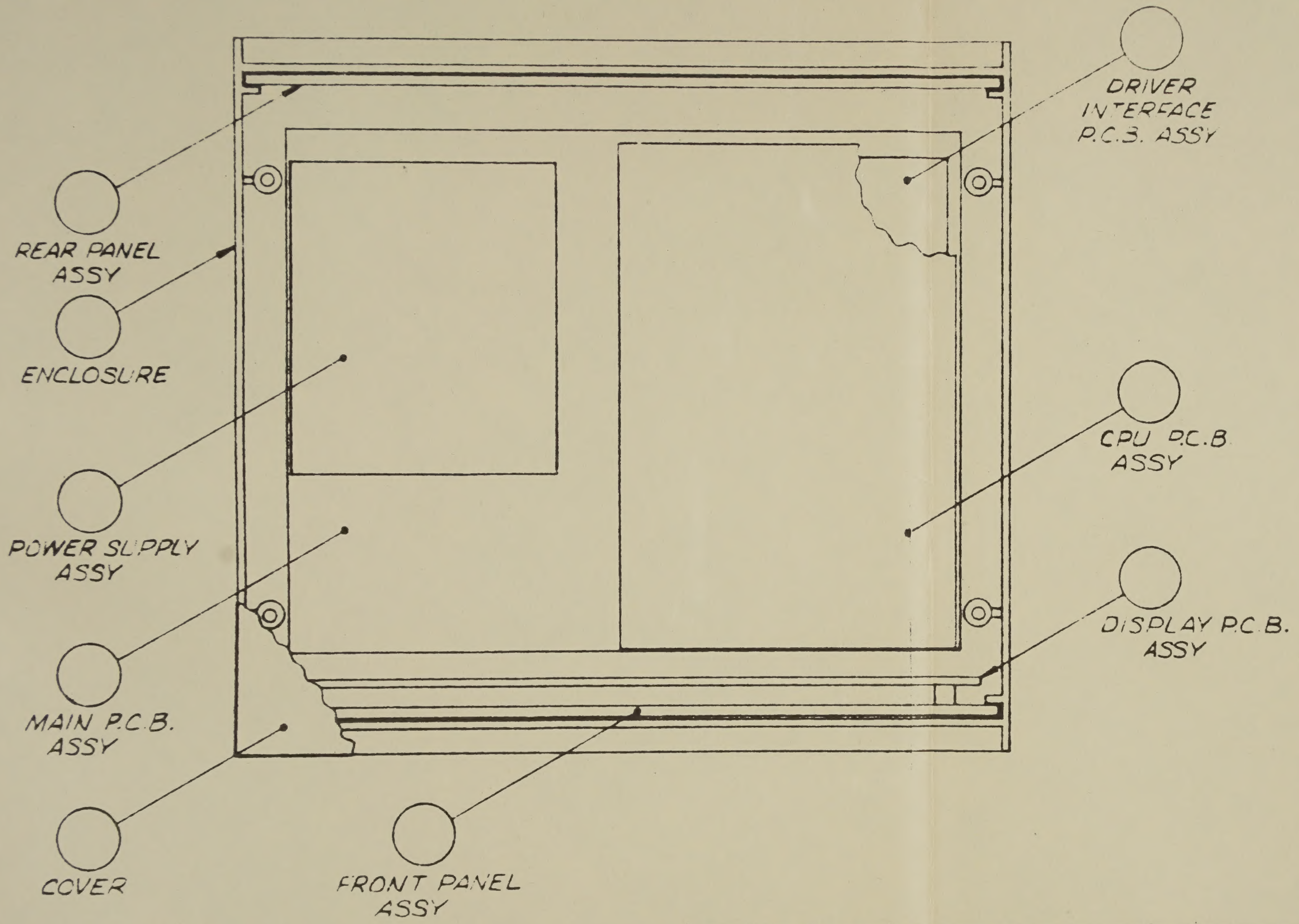
T3

PO-81


S+
R10
V+
R8
D7
Q2
R6
Q1
R7
VR1
R4
C2
D1
D1
C3
R5
IC1
1
2
10
13
6
3
5
7
4
2
VR2
D6
D5
SCR
D4
R13
C4
C1
R12
R3
R2
R1
R9
C5
D3
D2
V-
R11
S-
1
2
3
4
5

7.14 Power Supply Schematic

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED


DRIVER INTERFACE P.C.B. ASSY
REAR PANEL ASSY
ENCLOSURE
CPU P.C.B ASSY
POWER SUPPLY ASSY
DISPLAY P.C.B. ASSY
MAIN P.C.B. ASSY
COVER
FRONT PANEL ASSY

REQ D	ITEM	CODE	PART NO	DESCRIPTION	FINISH OR REF DES

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

TOLERANCES

.00	± .020	FRACTIONS
.000	± .010	+ 1/64 -
.0000	± .0005	
ANGLES ±		

MATERIAL

NEXT ASSY | USED ON

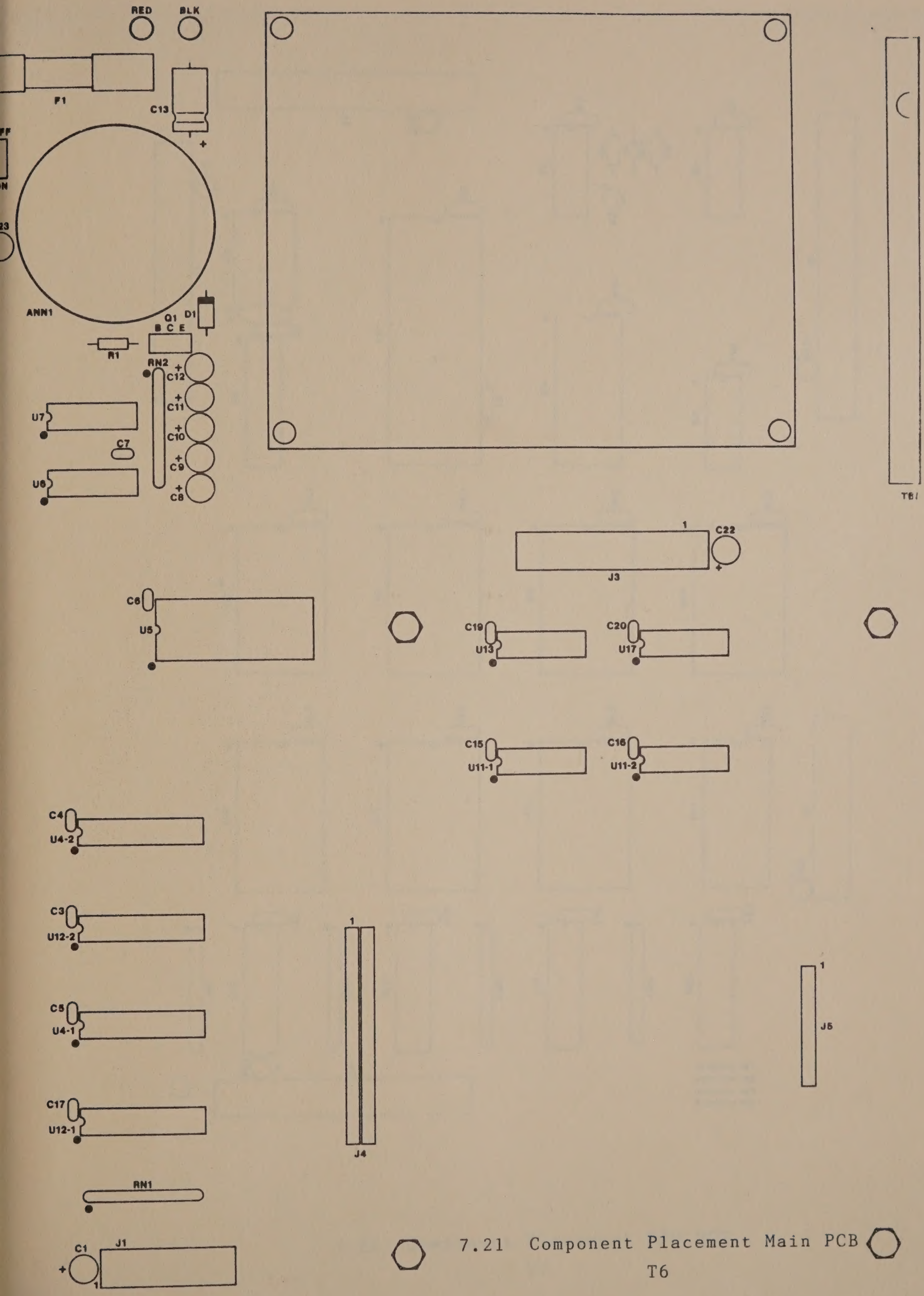
APPLICATION

DRAWN 11-84
CHECK
APPROVE

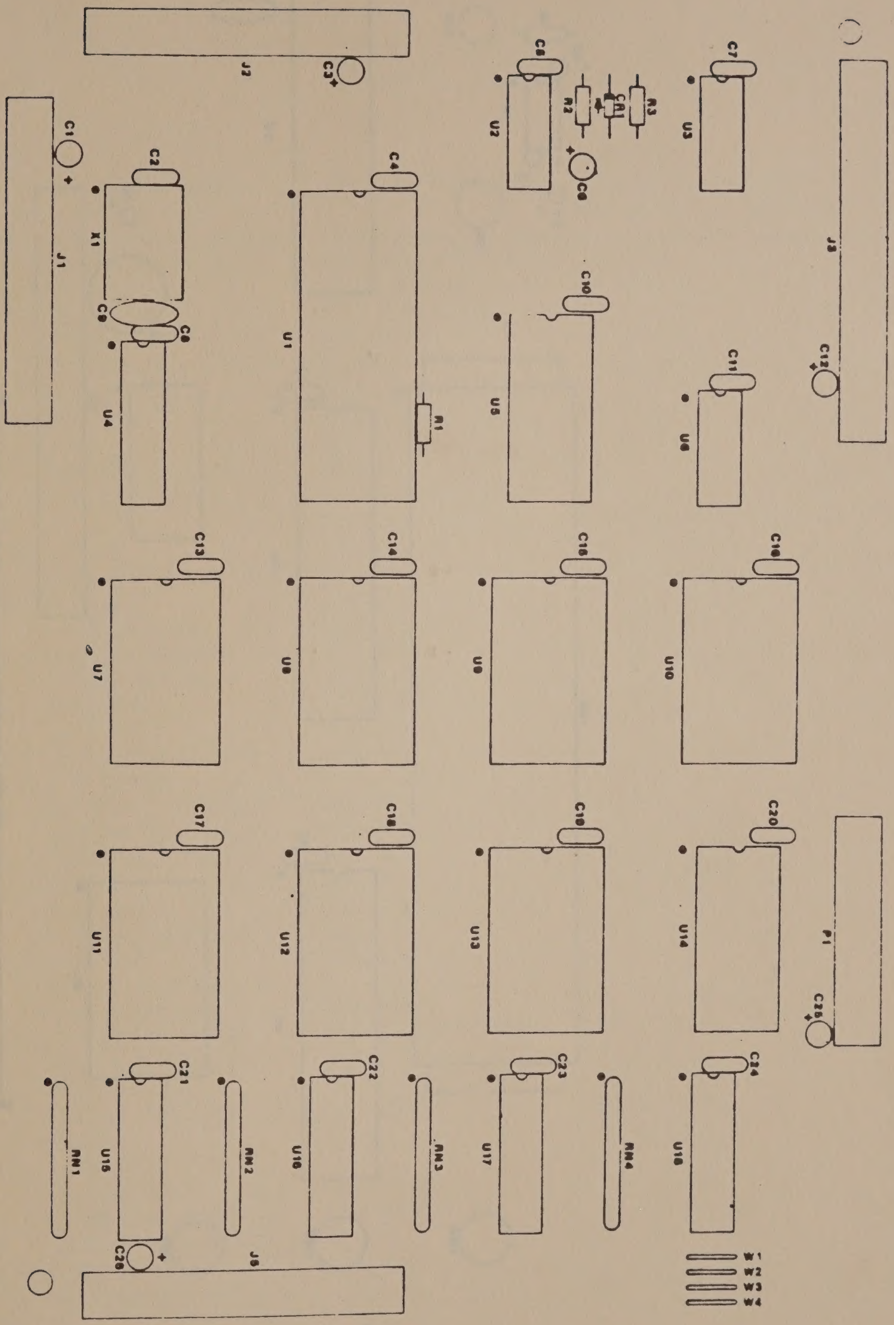
MICRO SCIENCES, INC

7.2 ICT-101 SUB ASSY Drawing
T5

SIZE B
CODE IDENT NO 6Z002
SCALE NONE
SHEET 1 OF

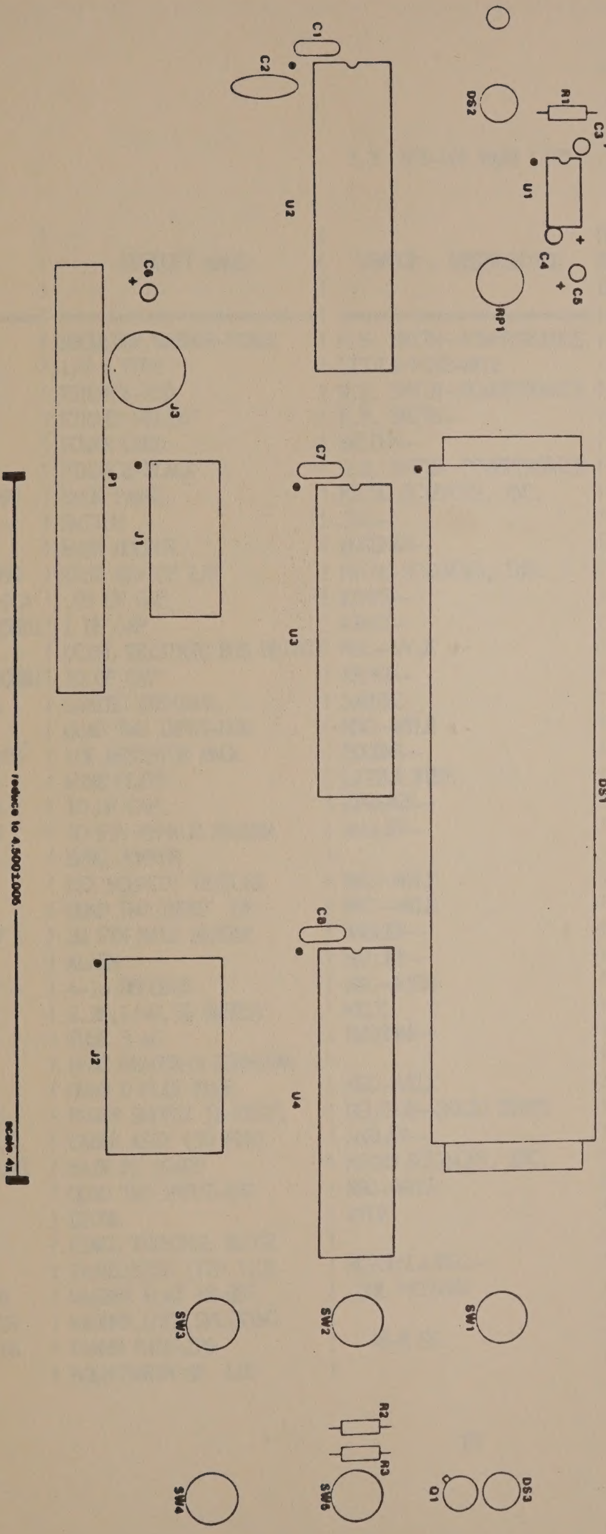

RED
BLK
F1
C13
+
FF
N
23
ANN1
Q1
B C E
D1
R1
RN2
+
C12
+
C11
+
C10
+
C9
+
C8
U7
C7
U6
TB1
1
C22
+
J3
C6
U5
C19
U13
C20
U17
C15
U11-1
C16
U11-2
C4
U4-2
C3
U12-2
C5
U4-1
C17
U12-1
1
J4
1
J5
RN1
C1
J1
+
1

7.21 Component Placement Main PCB T6


J2
C3
C5
U2
R2
CR1
R3
C6
C7
U3
J3
C1
J1
C2
X1
C4
U1
C9
C8
U4
R1
C10
U5
C11
U6
C12
C13
U7
C14
U8
C15
U9
C16
U10
C17
U11
C18
U12
C19
U13
C20
U14
P1
C25
C21
RN1
U15
RN2
C22
U16
RN3
C23
U17
RN4
C24
U18
C26
J5
W1
W2
W3
W4

7.22 Component Placement CPU PCB

T7


C1
C2
U2
DS2
R1
C3
U1
C4
C5
RP1
C6
J3
P1
J1
C7
U3
DS1
C8
U4
J2
SW1
SW2
SW3
R2
R3
SW4
SW5
Q1
DS3
reduce to 4.500±.005
scale 4x

7.23 Component Placement Display PCB

T8

7.3 ICT-101 PART LIST

PART NO.	PRODUCT NAME	VENDOR - DISTRIBUTOR	PART USED SEC	PART PER UNIT	REFERENCE DESIGNATOR
2154	SHOULDER WASHER-FIBER	H.H. SMITH—POWERTRONICS	R	4	
MDL 1/4	1/4 A FUSE	LITTLE FUSE-WYLE	R	2	
202-102	PINJACK-RED	H.H. SMITH—POWERTRONICS	R	1	
939	STRAIN RELIEF	H.H. SMITH—	R	1	
17740C	POWER CORD	BELDON—	R	1	
202-103	PINJACK-BLACK	H.H. SMITH—POWERTRONICS	R	1	
101-0001-999	BACK PANEL	MICRO SCIENCES, INC.	R	1	
LFH-223	SWITCH	JBT—	R	1	
HTA-BB	FUSE HOLDER	BUSSMAN—	R	1	
101-5000-999	TEST DEVICE I/F	MICRO SCIENCES, INC.	P	1	
C320C103M161CA	.01 UF CAP	KEMET—	M	10	C3-7, 15-17, 19, 20
196D105X9035HB1	1 UF CAP	KEMET—	M	5	C8-12
74C244	OCTAL TRISTATE BUS DRIVER	NSC—WYLE	M	4	U4-1, 4-2, 12-1, 12-2
196D106X9020JB1	10 UF CAP	KEMET—	M	3	C1, C22, 23
TS-120-G-AA	SAMTEC TERMINAL	SAMTEC	M	2.5	J4, 5
74C02	QUAD TWO INPUT-NOR	NSC—WYLE	M	2	U11-1, U11-2
4610X-101-103	10K RESISTOR PACK	BOURNS—	M	2	RN1, 2
122090	FUSE CLIPS	LITTLE FUSE	M	2	
TVA-1204	10 UF CAP	SPRANGE—	M	1	C13
609-5037	50 PIN FEMALE HEADER	ANSLEY—	M	1	J2
	BERG JUMPER		M	1	
74C14	HEX SCHMIDT TRIGGER	NSC—WYLE	M	1	U7
74C32	QUAD TWO INPUT OR	NSC—WYLE	M	1	U13
609-2637	26 PIN MALE HEADER	ANSLEY—	M	1	J1
SBM428	ALARM	MALORY—	M	1	ANN1
74HC154	4-16 DECODER	NSC—WYLE	M	1	U5
RC07GF223J	2.2K,1/4W,5% RESIST	WYLE	M	1	R1
MDX3	FUSE 3 AG	BUSSMAN—	M	1	F1
	BERG HEADER-3 TERMINAL		M	1	
74C74	QUAD D FLIP FLOP	NSC—WYLE	M	1	U6
VQ5-3.0C	POWER SUPPLY (E-TEST)	DELTRON—SOLID STATE	M	1	
PCB101605	CABLE ASSY (50 PIN)	ANSLEY—	M	1	
101-2000-000	MAIN PC BOARD	MICRO SCIENCES, INC.	M	1	
74C08	QUAD TWO INPUT-AND	NSC—WYLE	M	1	U17
1N4004	DIODE	WYLE	M	1	D1
8-176-2	CINCH TERMINAL BLOCK		M	1	TB1
MJE800	TRANSISTOR (TIP 110)	MOTOROLA/NSC—	M	1	Q1
#6 18-8	WASHER FLAT 18-8SS	SML PATTERN	H	36	
#6 18-8 SS	WASHER,LOCK,SPLTRING		H	29	
#6-32 5/16	PANHD PHILLIPS	18-8 SS	H	20	
BS41543SF	HOLNGSWRTH SF LUG		H	16	

PART NO.	PRODUCT NAME	VENDOR - DISTRIBUTOR	PART USED SEC	PART PER UNIT	REFERENCE DESIGNATOR
#6-32 X 3/4	FLAT HEAD, 82 PHILPS	BLACK OXIDE	H	9	
#6-32 18-8	NUT, HEX, SS(SMALL)		H	9	
#6 X 5/16	STANDOFF, HEX THREAD		H	9	
#6 X 5/16	PANHD PHILPS THRDFORM	TYPE B ZINC	H	7	
#6 X 3/4	STANDOFF, HEX THREAD		H	6	
#6 X 7/16	STANDOFF, HEX THREAD		H	4	
101-0003-000	PHENOLIC BLOCKS	MICRO SCIENCES, INC.	H	2	
101-0004-000	FOAM PADS, LCDMTG	MICRO SCIENCES, INC.	FA	1	
94R3R32GH	DISPLAY	G.E—L.X.D.	FA	1	DS1
524-AG11F	24 PIN W/W SOCKET	AUGAT—	FA	1	J2
520-AG11F	20 PIN W/W SOCKET	AUGAT—	FA	1	J1
39-3	BLACK PUSHBUTTON SWITCH	GRAYHILL—	F	4	SW2, 3, 4, 5
101-0002-999	FRNT PANEL	MICRO SCIENCES, INC.	F	1	
39-1	RED PUSHBUTTON SWITCH	GRAYHILL—	F	1	SW1
2154	SHOULDER WASHER-FIBER	H.H. SMITH—POWERTRONICS	F	1	
202-103	PINJACK-BLACK	H.H. SMITH—POWERTRONICS	F	1	J3
TE-101-FP	FRONT PANEL	PARAGON	F	0	
196D106X9020JB1	10 UF CAP	KEMET—	D	4	C3, 4, 5, 6
C320C103M161CA	.01 UF CAP	KEMET—	D	3	C1, 7, 8
HLCD0551P	DISPLAY DRIVER (PERPH)	HUGHES SEMI—ZEUS	D	2	U3, U4
HLMP-3500	KLED (+MOUNTING HRDWRE)	HP—	D	2	DS2, 3
RC07G221JS	220 OHM 1/4W, 5%	WYLE	D	1	R2
1CL7660CPA	5v CONVERTER	INTERSIL—SCHWEBER	D	1	U1
RC07GF331J	330 OHM 1/4W, 5%	WYLE	D	1	R1
RC07GF223J	2.2K,1/4W,5% RESIST	WYLE	D	1	R3
101-4000-000	DISPLAY PC BOARD	MICRO SCIENCES, INC.	D	1	
3339H-1-103	10K POT	BOURNS—	D	1	RP1
HLCD0550P	DISPLAY DRIVER (MAIN)	HUGHES SEMI—ZEUS	D	1	U2
DD121	120 PF CAP	CENTRALAB—	D	1	C2
2N2222A	TRANSISTOR	WYLE	D	1	Q1
C320C103M161CA	.01 UF CAP	KEMET—	C	19	C2, 4-8, 10, 11, 13-24
524-AG11D	24 PIN DIP SOCKET	AUGAT—	C	7	
196D106X9020JB1	10 UF CAP	KEMET—	C	6	C1, 3, 6, 12, 25, 26
74C244	OCTAL TRISTATE BUS DRIVER	NSC—WYLE	C	4	U15, 16, 17, 18
4610X-101-103	10K RESISTOR PACK	BOURNS—	C	4	RN1, 2, 3, 4
101-3001-000	ROM	MICRO SCIENCES, INC.	C	1	U7
101-3002-000	ROM	MICRO SCIENCES, INC.	C	1	U8
101-3003-000	ROM	MICRO SCIENCES, INC.	C	1	U9
101-3004-000	ROM	MICRO SCIENCES, INC.	C	1	U11
101-3005-000	ROM	MICRO SCIENCES, INC.	C	1	U12
101-3000-000	CPU PCB	MICRO SCIENCES, INC.	C	1	
DD200	20 PF CAP	CENTRALAB—	C	1	C9
RC07GF103J	10K RESISTOR (1/4W) 5%	WYLE	C	3	R1, 2, 3

PART NO.	PRODUCT NAME	VENDOR - DISTRIBUTOR	PART USED SEC	PART PER UNIT	REFERENCE DESIGNATOR
609-2637	26 PIN MALE HEADER	ANSLEY—	C	3	J1, 2, 5
74C08	QUAD TWO INPUT-AND	NSC—WYLE	C	1	U3
540-AG11D	40 PIN DIP SOCKET	AUGAT—	C	1	
74C14	HEX SCHMIDT TRIGGER	NSC—WYLE	C	1	U2
MTOT150/2.4576	MHZ CRYSTAL	MTRON—	C	1	X1
1N4148	DIODE	WYLE	C	1	CR1
609-3437	34 PIN MALE HEADER	ANSLEY—	C	1	J3
NSC800	PROCESSOR	NSC—	C	1	U1
74HC154	4116 DECODER	NSC—WYLE	C	1	U5
74C32	QUAD TWO INPUT OR	NSC—WYLE	C	1	U6
74C374	OCTAL FLIP FLOP	NSC—WYLE	C	1	U4
TC5516APL	RAM	TOSHIBA—ACT/SCHWEBER	C	1	U14
PCB101615	CABLE ASSY (26 PIN)	ANSLEY—	C	1	
101-9000-000	INSTRUCTION BOOK ASSY	MICRO SCIENCES, INC.	A	1	
CLB-450TAN	BOX PLASTIC	PACTEK—SOLID STATE	A	1	
3780-36-0	GRABBER & LEAD (GROUND)	PAMONA ELECT—NEWARK	A	1	
930113-1	TEST CBLE ASY-20 PIN	AP—PIONEER	A	1	
			TOTAL:		

M=MAIN ASSY—P=PIGGY ASSY—C=CPU ASSY—D=DISPLAY ASSY—F=FRONT ASSY—R=REAR ASSY—
FA=DISPLAY/FRONT ASSY—A=BOX/LOOSE ITEMS/MISC.—H=HARDWARE—B=PKG MATS—

7.4 POWER SUPPLY PARTS LIST

DESIGN	DESCRIPTION	SPECIFICATION	UL FILE	MANUFACTURER
	PRINTED CIRCUIT BOARD	FR-4, 94V-0	E72375	YA HSIN INDUSTRIAL CO. LTD.
R1	CARBON FILM RESISTOR	2.2K OHM 1/4W +-5%		SHING YA ELECTRIC WORK CO.
R2, R3, R4	PRECISION RESISTOR	2.21K OHM 1/4W +-1%		FIRST ELECTRONIC CO. LTD.
R5	CARBON FILM RESISTOR	2.7K OHM 1/4W +-5%		SHING YA ELECTRIC WORK CO.
R6	CARBON FILM RESISTOR	1.5K OHM 1/4W +-5%		SHING YA ELECTRIC WORK CO.
R7	CARBON FILM RESISTOR	10 OHM $\frac{1}{2}$W +-5%		SHING YA ELECTRIC WORK CO.
R8	CEMENT RESISTOR	0.1 OHM 3W +-10%		SHING YA ELECTRIC WORK CO.
R9	CARBON FILM RESISTOR	470 OHM 1/4W +-5%		SHING YA ELECTRIC WORK CO.
R10, R11	CARBON FILM RESISTOR	6.8 OHM 1/4W +-5%		SHING YA ELECTRIC WORK CO.
R12	CARBON FILM RESISTOR	4.7K OHM 1/4W +-5%		SHING YA ELECTRIC WORK CO.
R13	CARBON FILM RESISTOR	110 OHM 1/4W +-5%		SHING YA ELECTRIC WORK CO.
C1	ELECTROLYTIC CAPACITOR	10000UF 16V VENT TYPE		ELTAI ELECTRONIC CO. LTD. TEAPO ELECTRONIC CO. LTD.
C2	ELECTROLYTIC CAPACITOR	100UF 35V VENT TYPE		ELTAI ELECTRONIC CO. LTD. TEAPO ELECTRONIC CO. LTD.
C3	CERAMIC CAPACITOR	0.0033UF 50V		SUCCESS ELECTRONIC CO. LTD.
C4	ELECTROLYTIC CAPACITOR	220UF 10V VENT TYPE		ELTAI ELECTRONIC CO. LTD. TEAPO ELECTRONIC CO. LTD.
C5	ELECTROLYTIC CAPACITOR	10UF 50V VENT TYPE		ELTAI ELECTRONIC CO. LTD. TEAPO ELECTRONIC CO. LTD.
D1, D4, D7	RECTIFIER DIODE	1N4002 100V 1A		GENERAL INSTRUMENT OF TAIWAN LTD. RECTRON LTD.
D2, D3	RECTIFIER DIODE	1N5401,50V 1A		GENERAL INSTRUMENT OF TAIWAN LTD. RECTRON LTD.
D5	ZENER DIODE	H26A 1L		HITACHI ELECTRIC CO. LTD.
01	TRANSISTOR	TIP41A		PRESIDENT ENTERPRISES CORP.
02	TRANSISTOR	2N3055		PRESIDENT ENTERPRISES CORP.
10	INTEGRATED CIRCUIT	MC1723CP		MOTOROLA SEMICONDUCTOR LTD.
	IO SOCKET	14P		TAIWAN MOLEX CORP.
SCR	SILICON CONTROL RECTIFIER	2N6395		TAG ELECTRONIC CO. LTD.
VR1	SEMI-FIXED RESISTOR	500 OHM ROUND		TAIWAN RIVER CO. LTD.
VR2	SEMI-FIXED RESISTOR	2K OHM ROUND		TAIWAN RIVER CO. LTD.
	TERMINAL PIN			LIANG SHUNG ENTERPRISE CO. LTD.
	INSULATION PAD			YUTO ENTERPRISE CO. LTD.
	RIVET			LIANG SHUNG ENTERPRISE CO. LTD.
	SILICON RUBBER INSULATOR	TD-3		SHIGMA INDUSTRY TAIWAN CO. LTD.
	L BRACKET	ALUMINUM		TAIWAN ALUMINUM CORP.
	SCREW	4 X 40 ISO ROUND HEAD		LIANG SHUNG ENTERPRISE CO. LTD.
	SCREW	3 X 12 ISO ROUND HEAD		LIANG SHUNG ENTERPRISE CO. LTD.
	SPRING WASHER	4MM		LIANG SHUNG ENTERPRISE CO. LTD.
	WASHER	4MM		LIANG SHUNG ENTERPRISE CO. LTD.
	SCREW NUT	4MM		LIANG SHUNG ENTERPRISE CO. LTD.
	LOCKWASHER, EXTERNAL TOOTH	3MM		LIANG SHUNG ENTERPRISE CO. LTD.
	TRANSFORMER			FHIHONG ENTERPRISE CO. LTD.

ACCOHIDE®

A CHEMICAL RESIN

29250	GOLD
29251	BLACK
29253	BLUE
29256	GREEN
29258	BEIGE
29259	RED

ACCO INTERNATIONAL INC.
CHICAGO, IL. 60619